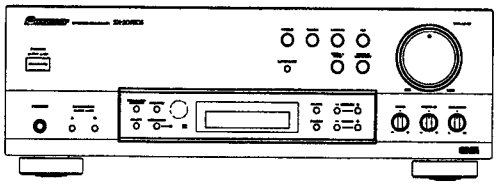
PION -05758

Service Manual

Pioneer



ORDER NUMBER: XRV1003

STEREO RECEIVER

SX-209RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODELS AND TYPES.

Type	Power Requirement	Remarks
HYXK	AC220-230V	
HVXK	AC230V	

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NOVEMBER 1999 -

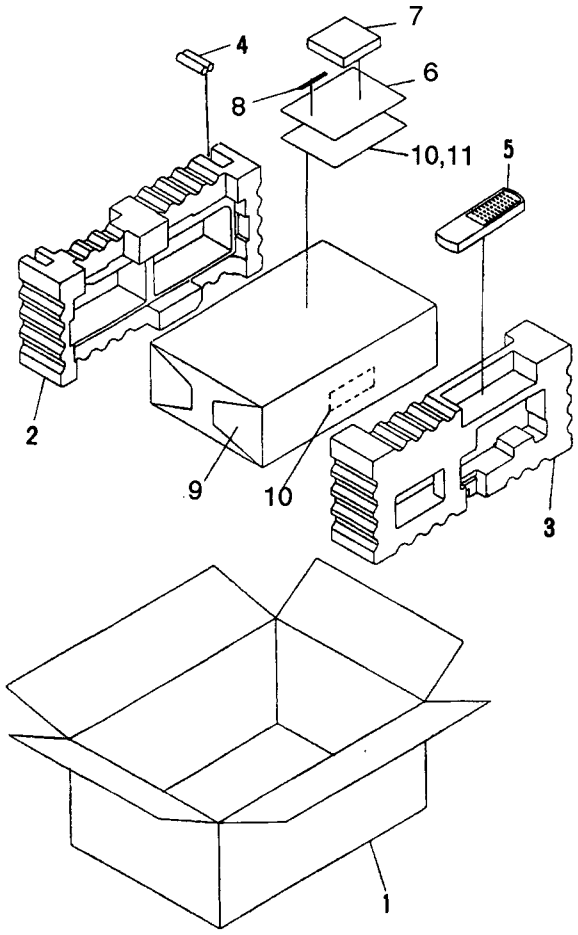
1. EXPLODED VIEWS AND PARTS LIST

NOTES: - Parts marked by 'NSP' are generally unavailable because they are not in our master spare parts list.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▼ mark on product are used for disassembly.

1.1 PACKING

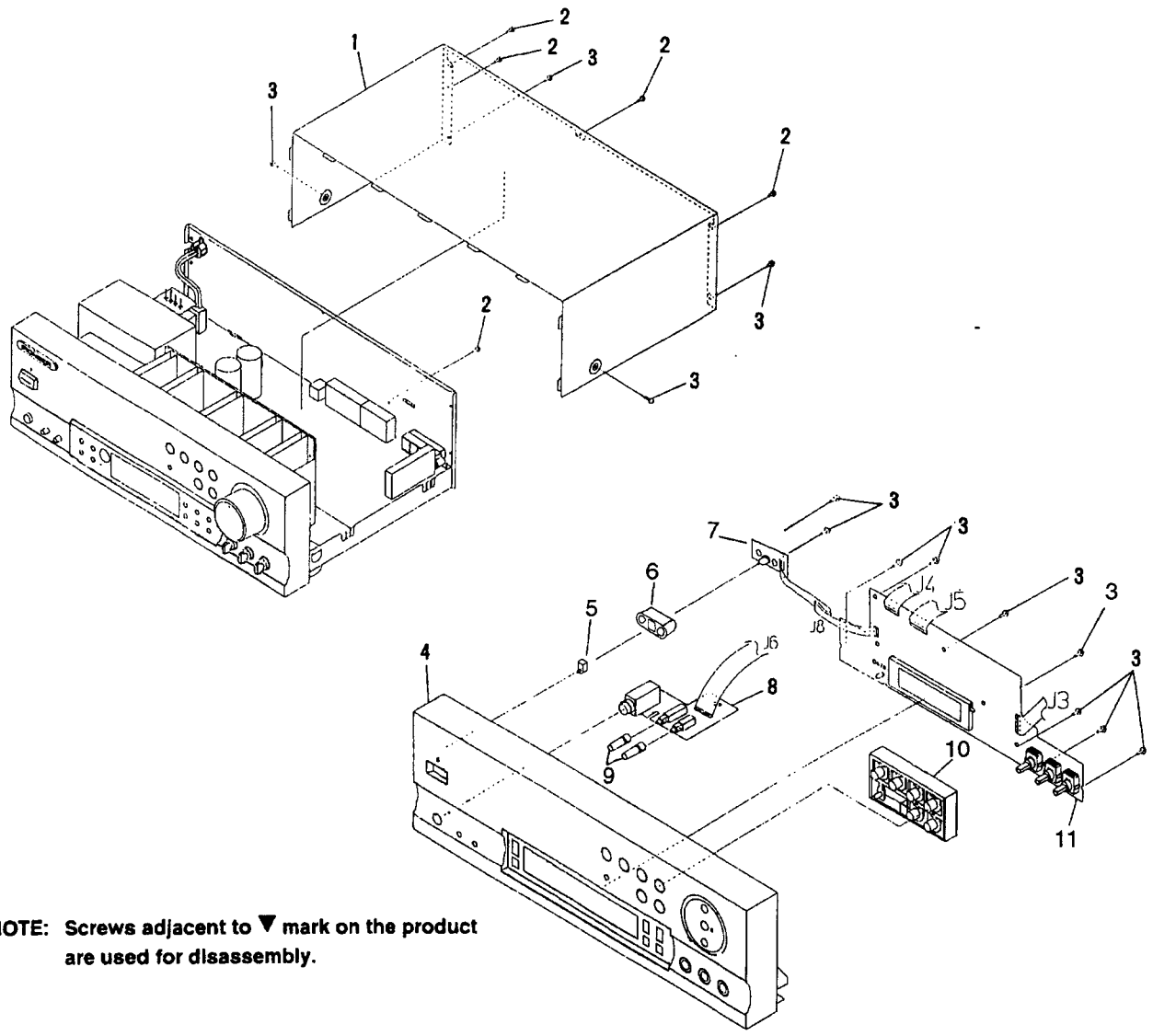
PARTS FOR SX-209RDS/HYXK AND SX-209RDS/HVXK

Mark	No.	Description	Parts No.
	1	Packing case	XHD1017
	2	Front pad	XHA1005
	3	Rear pad	AHA7116
NSP	4	Dry cell batteries (R6P, AA)	VEM-013
	5	Remote control unit (CU-SX109)	AXD7200
	6 (a)	Operating instructions (HYXK) (English/French/German/Italian/ Dutch/Swedish/Spanish/Portugese)	XRD1002
	6 (b)	Operating instructions (HVXK) (English)	XRB1008
	7	Loop antenna assembly	ATB7006
	8	Fm antenna	ADH7005
	9	Packing sheet	AHG1215
	10	serial sheet (Warranty card and rear panel)	AAX1523
NSP	11	Warranty card	ARY7022



1.2 EXPLODED VIEWS (1/3)
PARTS FOR SX-209RDS/HYXK AND SX-209RDS/HVXK

Mark	No.	Description	Parts No.
	1	Bonnet	XNE1003
	2	Screw	BCZ30P080FZK
	3	Screw	BBZ30P080FZK
	4	Front panel	XNW1006
	5	LED lens	PNW2019
	6	LED lens holder	XMR1004
NSP	7	LED assy	XWZ1005
NSP	8	SP SW Assy	XWZ1011
	9	Push button	AAD7283
	10	Function button	XAC1004
	11	Front assy	XWZ1006



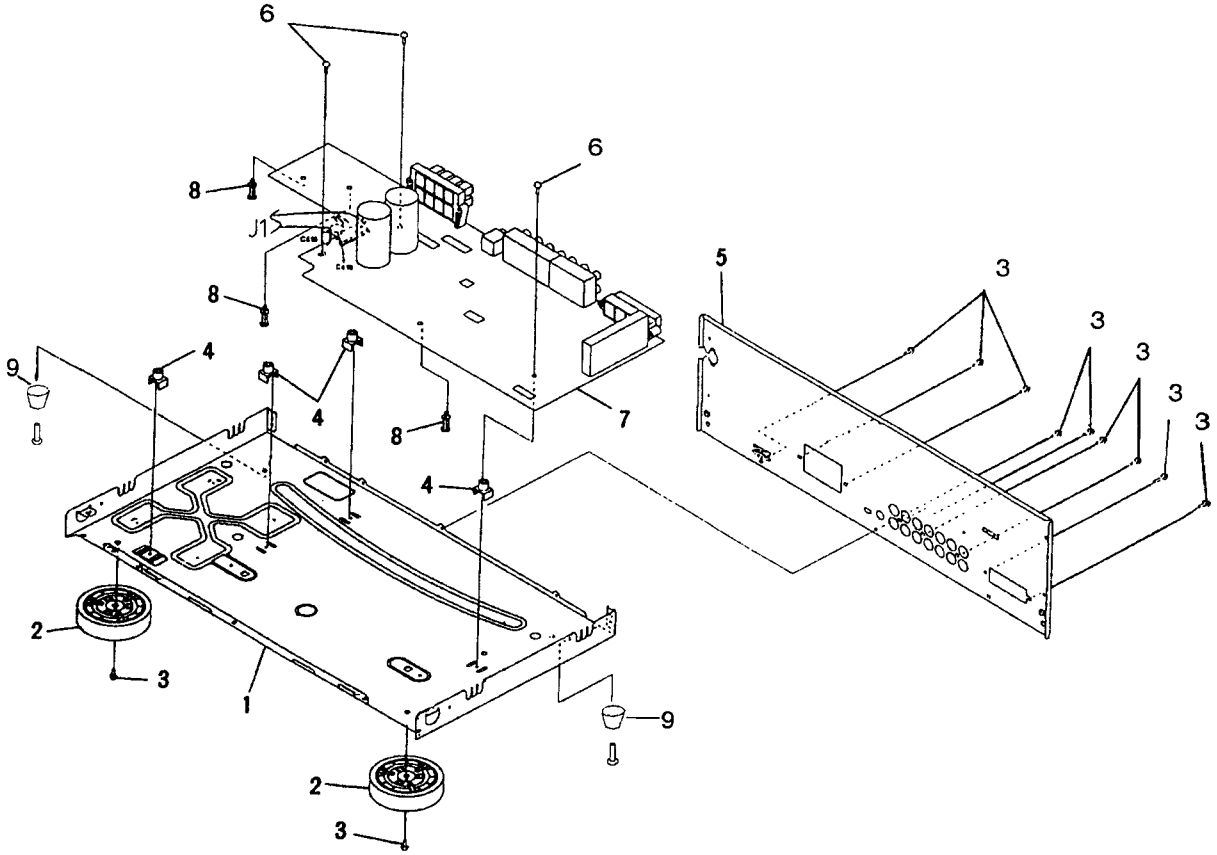
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

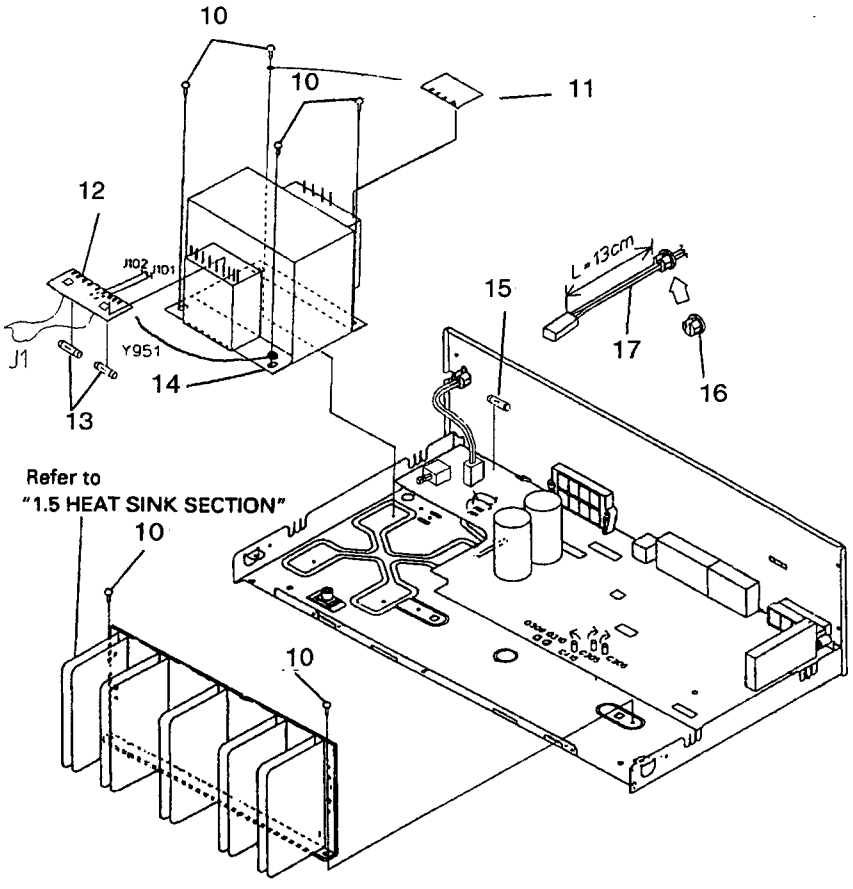
1.3 EXPLODED VIEWS (2/3)

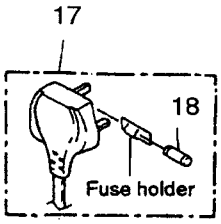
PARTS FOR SX-209RDS/HYXK AND SX-209RDS/HVXK

Mark	No.	Description	Parts No.
NSP	1	Chassis	XNA1002
	2	Insulator	PNW2766
	3	Screw	BBZ30P080FZK
	4	PCB mould	AMR2533
	5 (a)	Rear panel (HYXK)	XNC1006
	5 (b)	Rear panel (HVXK)	XNC1007
	6	Screw	BBZ30P200FMC
NSP	7	Mother assy	XWZ1014
	8	PCB suport	AEC1372
	9	Rubber foot	REC1263
	10	Screw	ABA7019
NSP	11	Primary Assy	XWZ1013
NSP	12	Transformer assy	XWZ1010
⚠	13	Fuse (FU2,FU3, T800mAL250V)	AEK1053
⚠	14	Power Transformer (T1) (T1 AC220-230V)	ATS7121
⚠	15	Fuse (FU1, T2.5AL250V)	AEK1055
	16	Strain relief	CM-22B
⚠	17 (a)	AC power cord (HYXK)	VDG1061
⚠	17 (b)	AC power cord (HVXK)	VDG1063
⚠	18	Fuse (HVXK only) (T5A/250V)	AEK1046

EXPLODED VIEWS (2/3)





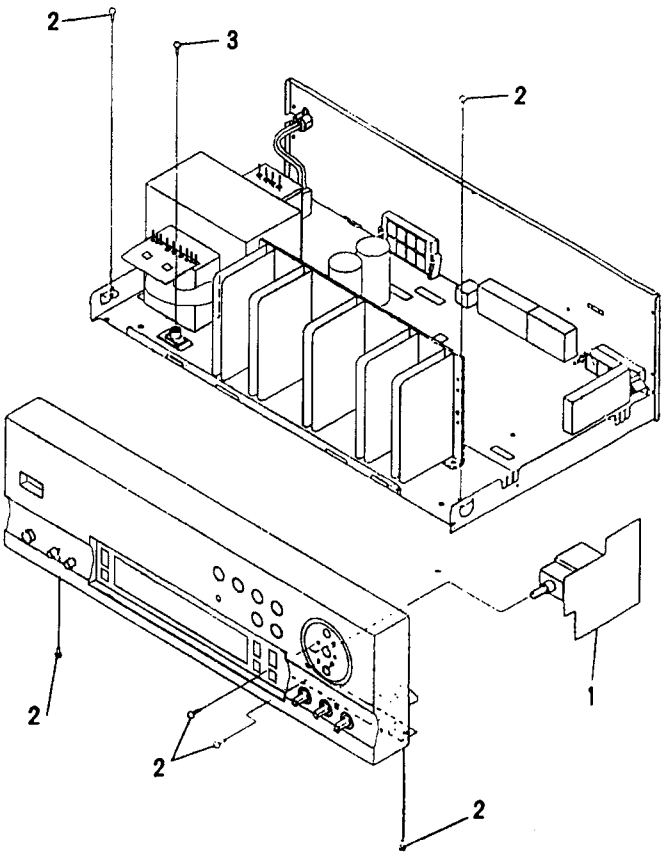


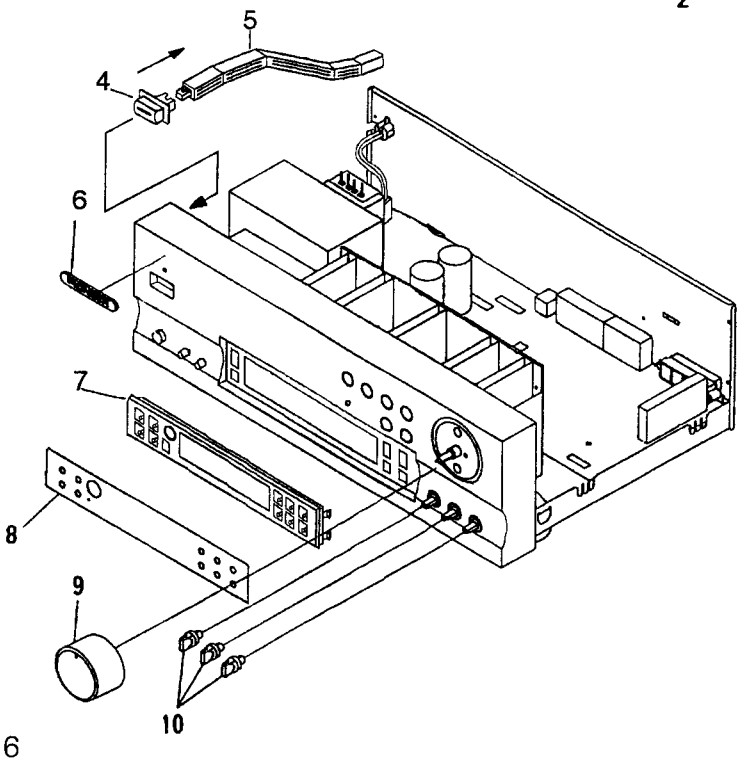
HVXK type only

1.4 EXPLODED VIEWS (3/3)

PARTS FOR SX-209RDS/HYXK AND SX-209RDS/HVXK

Mark	No.	Description	Parts No.
NSP	1	Volume assy	XWZ1007
	2	Screw	BBZ30P080FZK
	3	Screw	BBZ30P200FMC
	4	Power button	XAC1005
	5	Power arm	XMR1003
	6	Badge	PAM1776
	7	Sub Panel	XNW1008
	8	Display Window	XAM1006
	9	Round knob L	AAB7083
	10	Round knob S	XAB1001

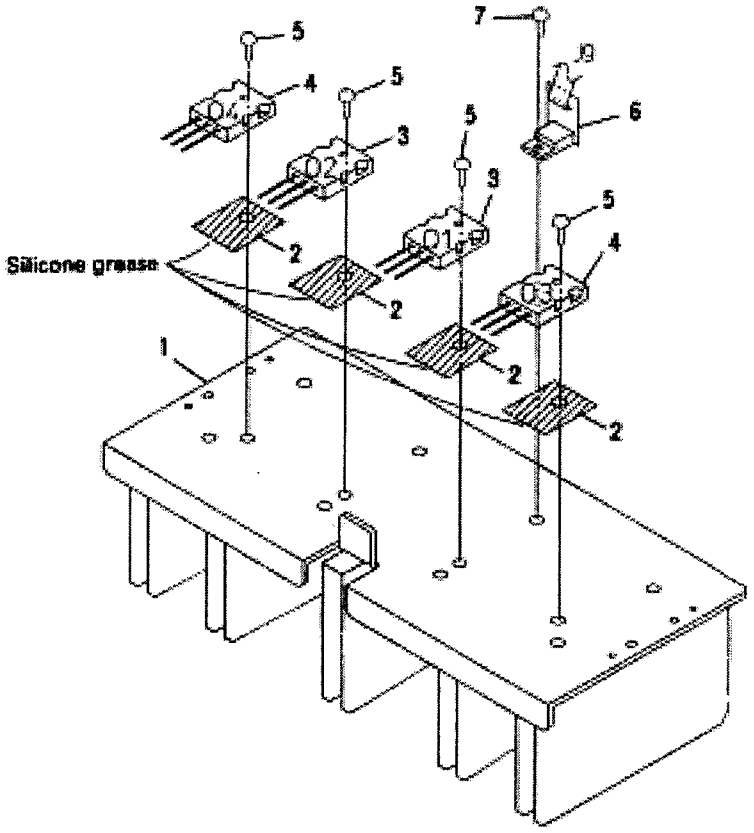




1.5 HEAT SINK SECTION

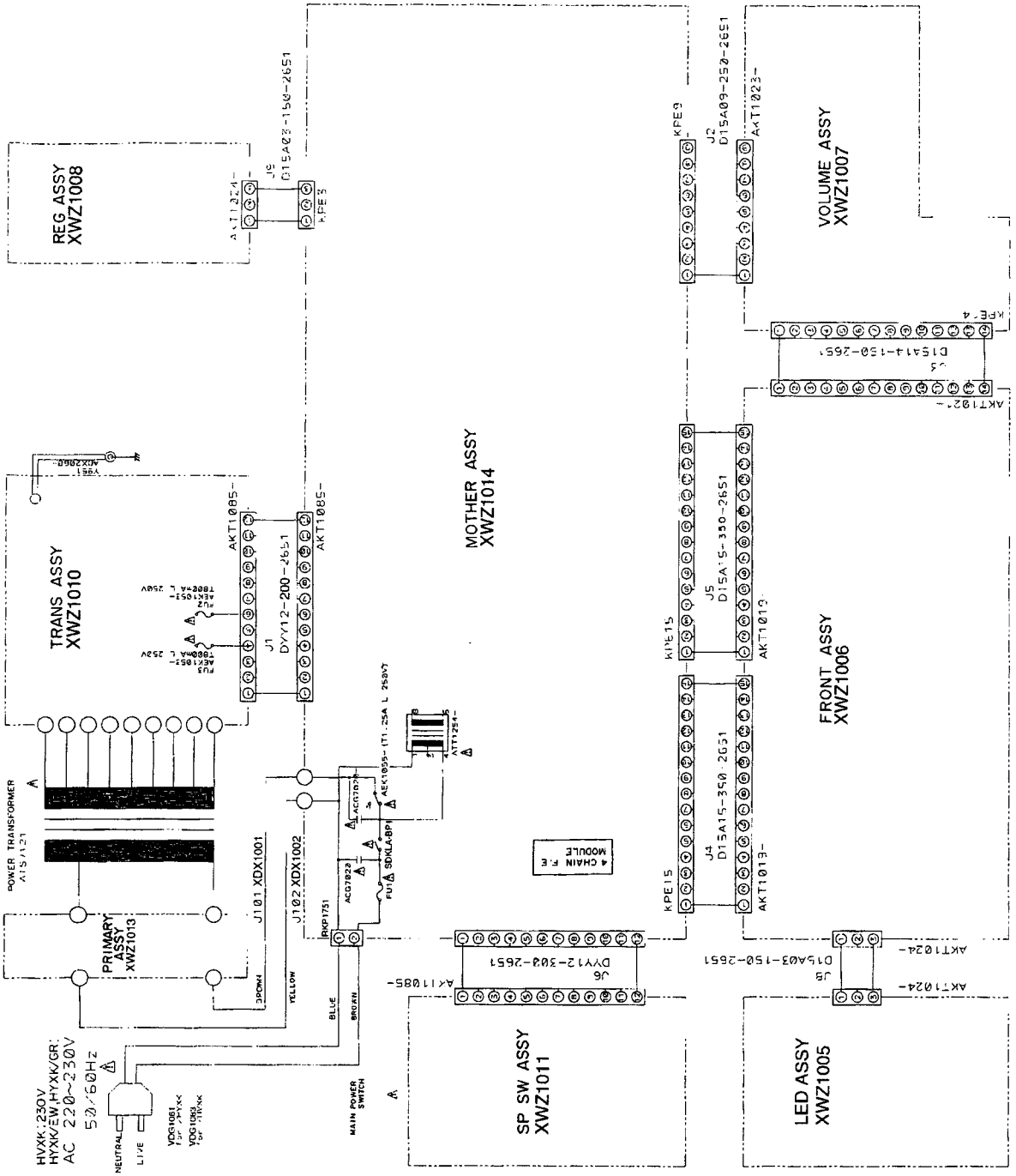
PARTS FOR SX-209RDS/HYXK AND SX-209RDS/HVXK

Mark	No.	Description	Parts No.
NSP	1	Heatsink	ANH1476
	2	Mica wafer	AEE7010
⚠	3	Transistor (Q1,Q2)	2SC5196(P)
⚠	4	Transistor (Q3,Q4)	2SA1939(P)
	5	Screw	ABA1037
NSP	6	REG ASSY	XWZ1008
	7	Screw	BBZ30P080FZK



2. SCHEMATIC AND PCB CONNECTION DIAGRAM

2.1 OVERALL SCHEMATIC DIAGRAM



NOTE FOR SCHEMATIC DIAGRAMS (Type 2A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: Ω kΩ, MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF):/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ☐ or ~ V :
   DC voltage (V) at no input signal unless otherwise noted
   ☐ mA or ~ mA :
   DC current at no input signal unless otherwise noted
7. **OTHERS:**
   - Ø or Ø : Adjusting point
   - ▽ : Measurement point
   - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—☐ ON THE SCHEMATIC DIAGRAM:**
   - SCH—☐ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

FRONT ASSY
S825 : STATION +
S827 : STATION –
S828 : CLASS
S829 : ECM MODE
S830 : TUNING +
S831 : TUNING –
S832 : FM/AM
S833 : PHONO
S834 : TAPE 2 MONITOR
S835 : TAPE 1/VCR
S836 : LOUDNESS
S837 : MEMORY
S838 : CD
S839 : LD/DVD
S840 : TUNER
S841 : CHARACTER/SEARCH
S842 : RF ATT

POWER SW ASSY
S876 : POWER STANDBY/ON

SP SW ASSY
S701 : SPEAKERS B ON-OFF
S702 : SPEAKERS A ON-OFF

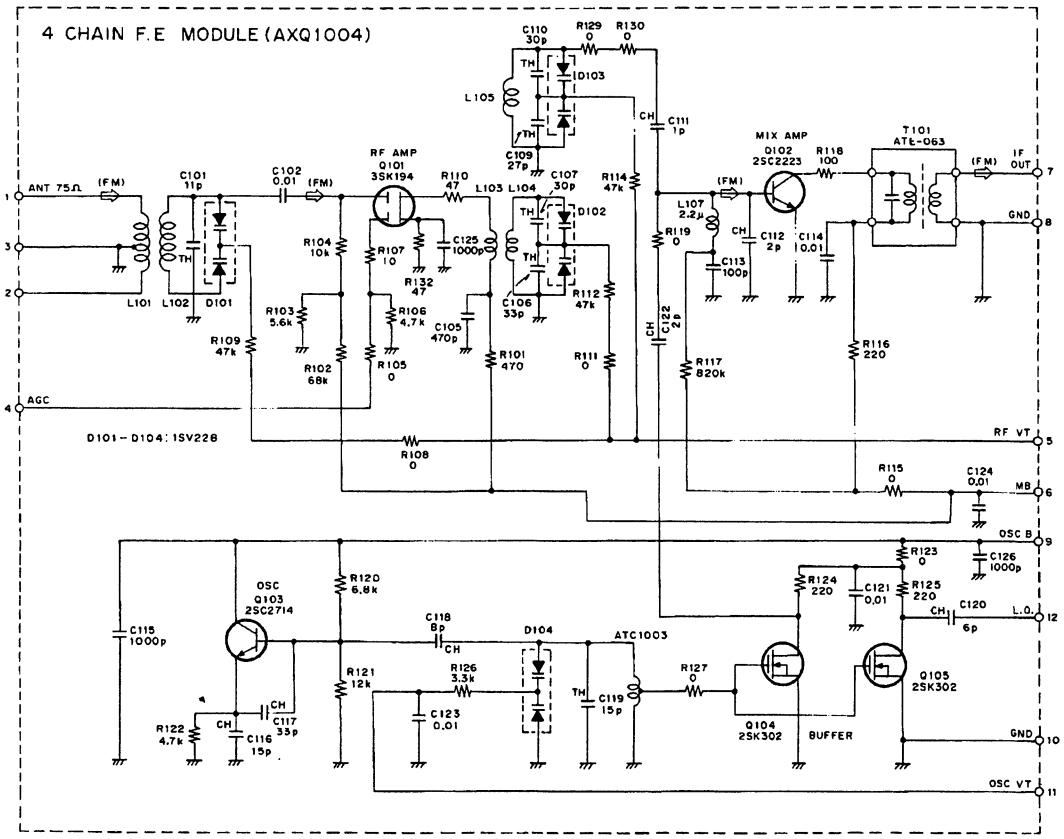
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3- terminal regulator

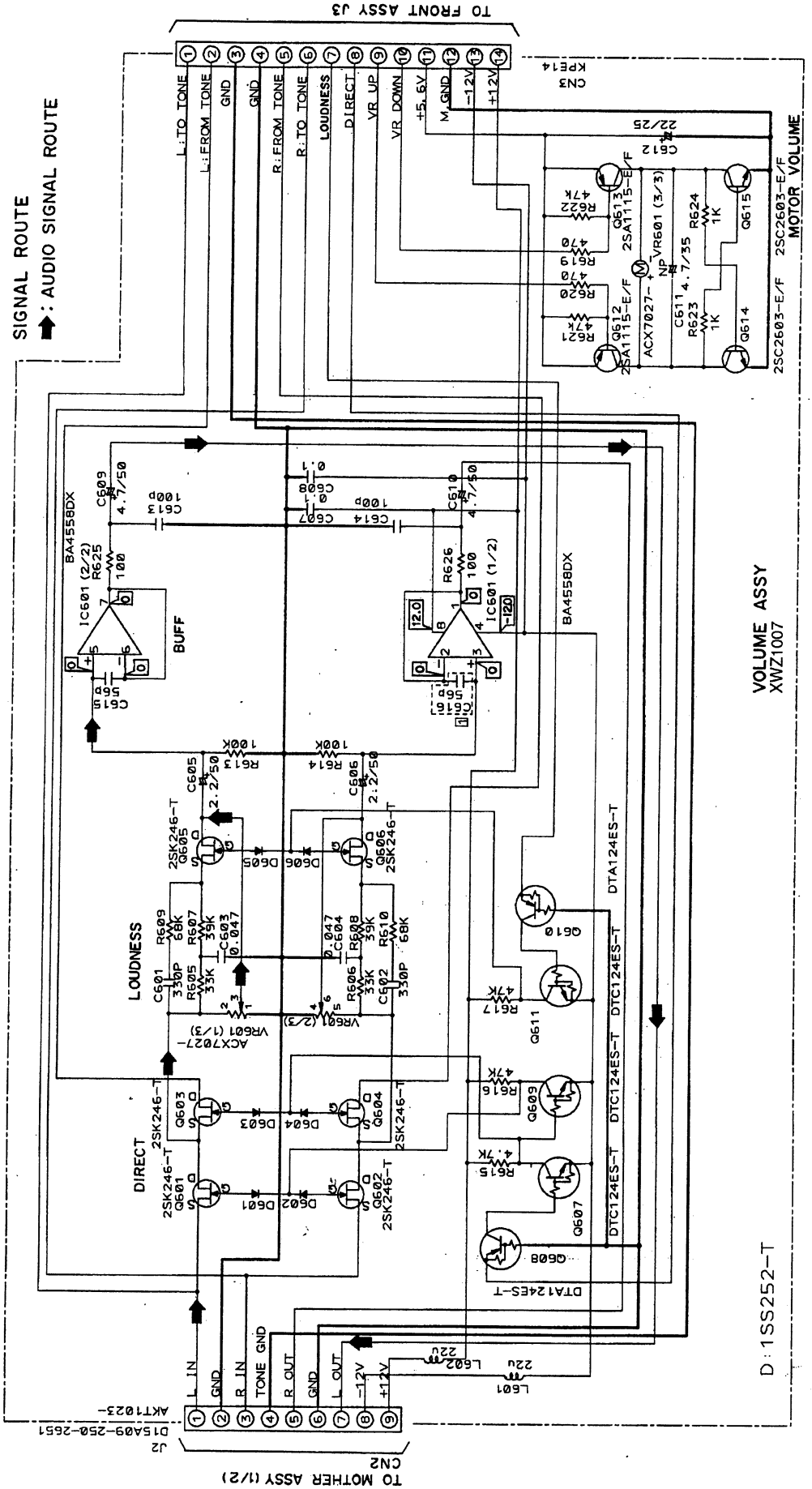
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

2.2 CHAIN F.E. MOD-

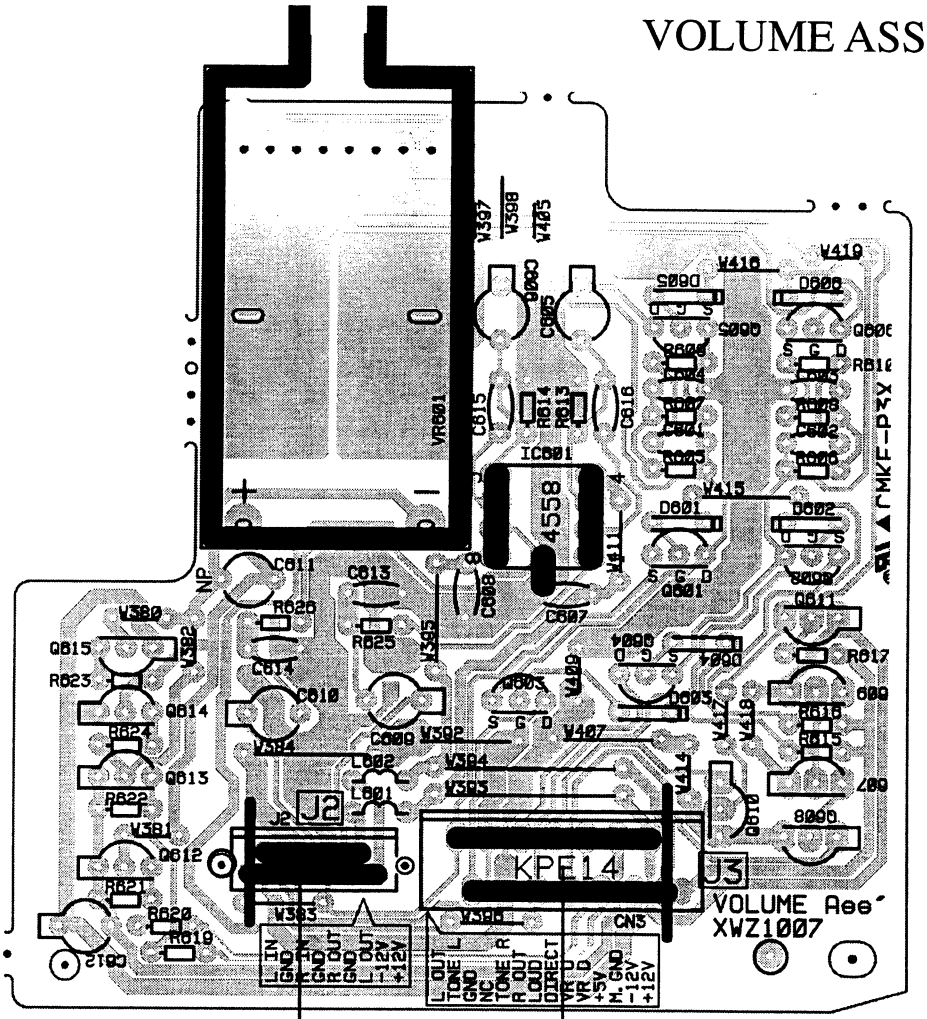


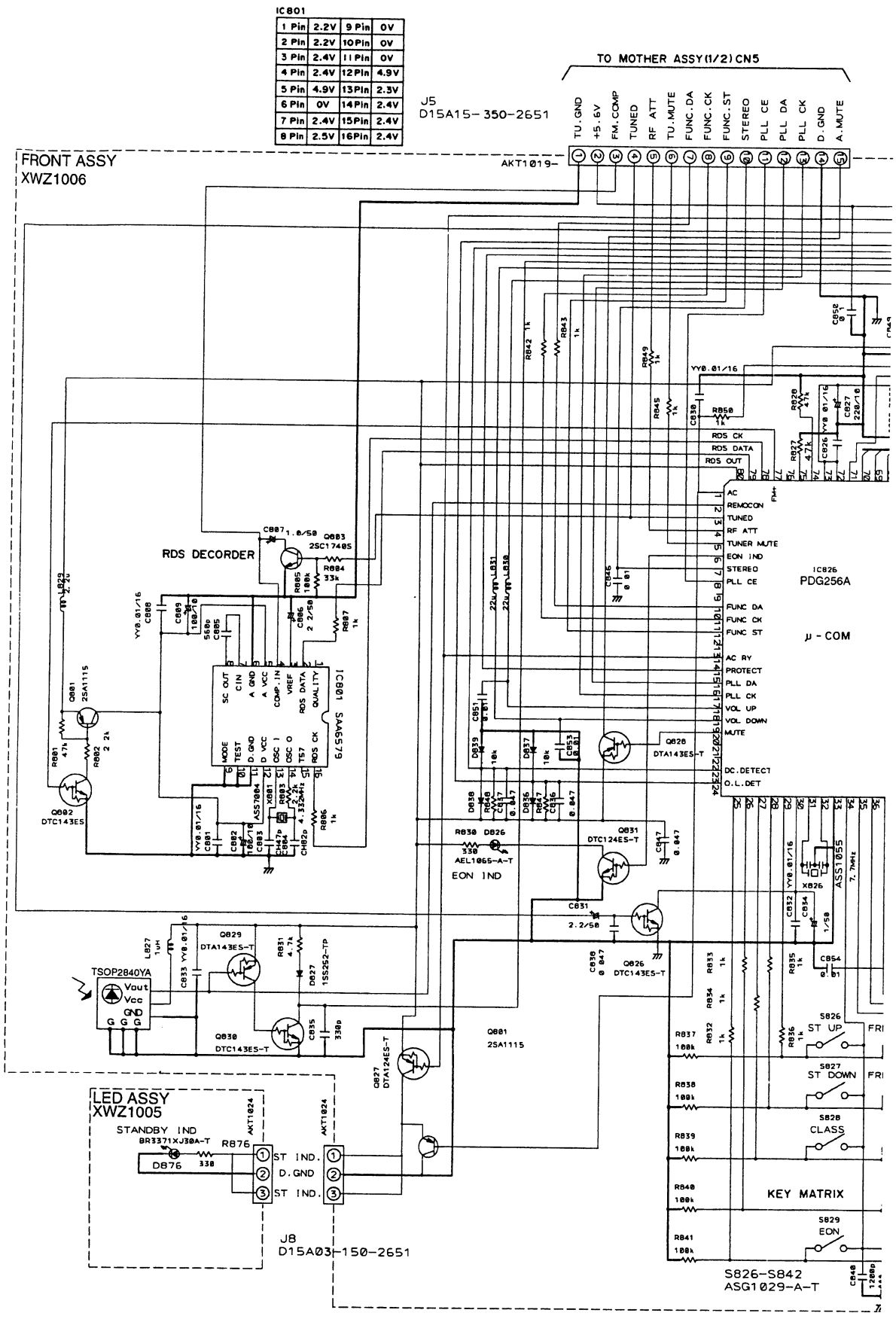
SIGNAL ROUTE
(FM)⇨ : FM SIGNAL ROUTE

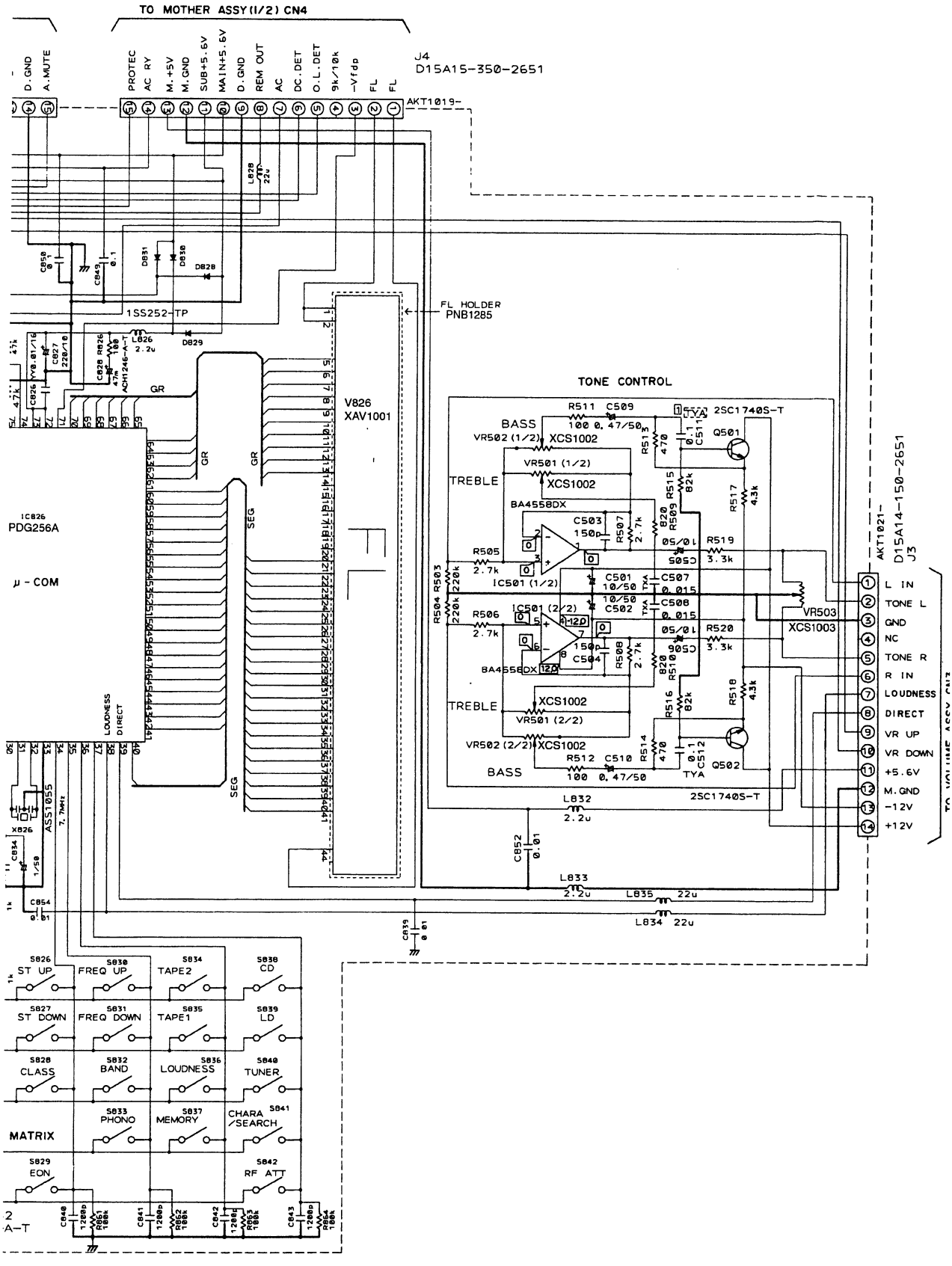
2.3 VOLUME ASSY



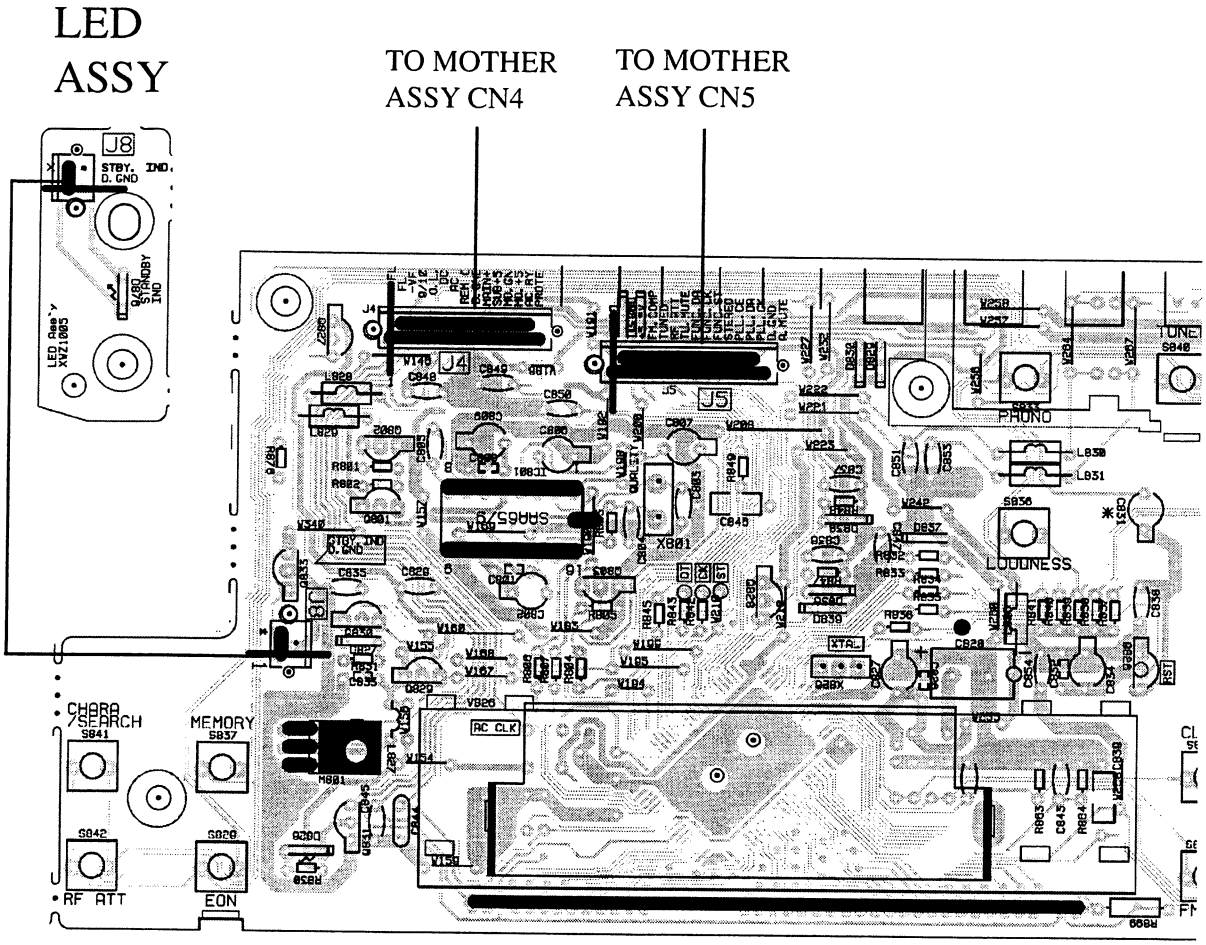
VOLUME ASSY


KPE14
J2
J3
CN3
VOLUME Ass'y
XWZ1007
IC601
4558
VR601
TO MOTHER
ASSY CN2
TO FRONT
ASSY J3


IC801
1 Pin 2.2V 9 Pin 0V
2 Pin 2.2V 10 Pin 0V
3 Pin 2.4V 11 Pin 0V
4 Pin 2.4V 12 Pin 4.9V
5 Pin 4.9V 13 Pin 2.3V
6 Pin 0V 14 Pin 2.4V
7 Pin 2.4V 15 Pin 2.4V
8 Pin 2.5V 16 Pin 2.4V
TO MOTHER ASSY(1/2) CN5
J5
D15A15-350-2651
TU.GND
+5.6V
FM.COMP
TUNED
RF ATT
TU.MUTE
FUNC.DA
FUNC.CK
FUNC.ST
STEREO
PLL CE
PLL DA
PLL CK
D.GND
A.MUTE
AKT1019-
FRONT ASSY
XWZ1006
RDS DECORDER
IC801 SAA6579
IC826
PDG256A
μ-COM
RDS CK
RDS DATA
RDS OUT
AC
REMOCON
TUNED
RF ATT
TUNER MUTE
EON IND
STEREO
PLL CE
FUNC DA
FUNC CK
FUNC ST
AC RY
PROTECT
PLL DA
PLL CK
VOL UP
VOL DOWN
MUTE
DC.DETECT
O.L.DET
EON IND
TSOP2840YA
Vout
Vcc
GND
LED ASSY
XWZ1005
STANDBY IND
ST IND.
D.GND
ST IND.
J8
D15A03-150-2651
S826 ST UP
S827 ST DOWN
S828 CLASS
KEY MATRIX
S829 EON
S826-S842
ASG1029-A-T

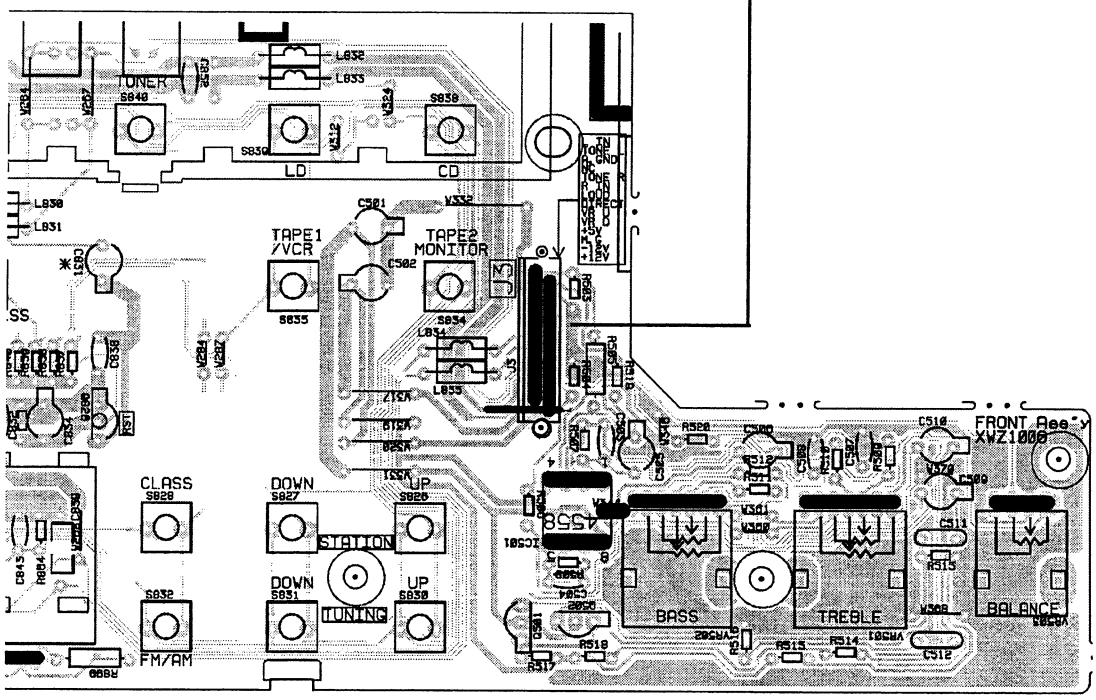

TO MOTHER ASSY(1/2) CN4
D.GND
A.MUTE
PROTEC
AC RY
M.+5V
M.GND
SUB+5.6V
MAIN+5.6V
D.GND
REM OUT
AC
DC.DET
O.L.DET
9k/10k
-Vfdp
FL
FL
J4
D15A15-350-2651
AKT1019-
1SS252-TP
FL HOLDER
PNB1285
V826
XAV1001
IC826
PDG256A
μ-COM
TONE CONTROL
BASS
TREBLE
XCS1002
BA4558DX
IC501 (1/2)
IC501 (2/2)
2SC1740S-T
Q501
Q502
VR503
XCS1003
AKT1021-
D15A14-150-2651
J3
L IN
TONE L
GND
NC
TONE R
R IN
LOUDNESS
DIRECT
VR UP
VR DOWN
+5.6V
M.GND
-12V
+12V
TO VOLUME ASSY CN12
ASS1055
X826
ST UP
FREQ UP
TAPE2
CD
ST DOWN
FREQ DOWN
TAPE1
LD
CLASS
BAND
LOUDNESS
TUNER
PHONO
MEMORY
CHARA /SEARCH
MATRIX
EON
RF ATT

2.4 FRONT ASSY AND LED ASSY

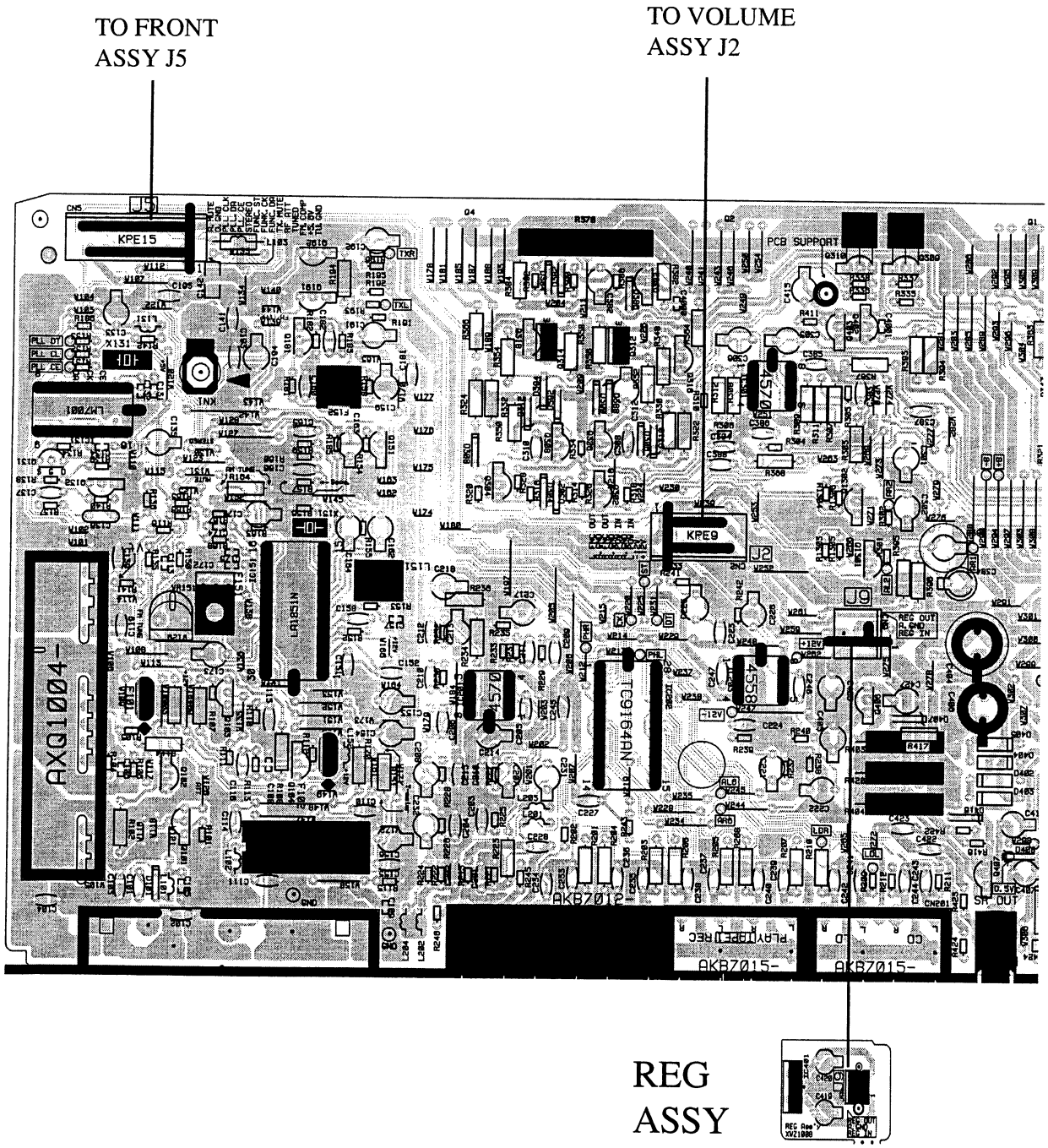


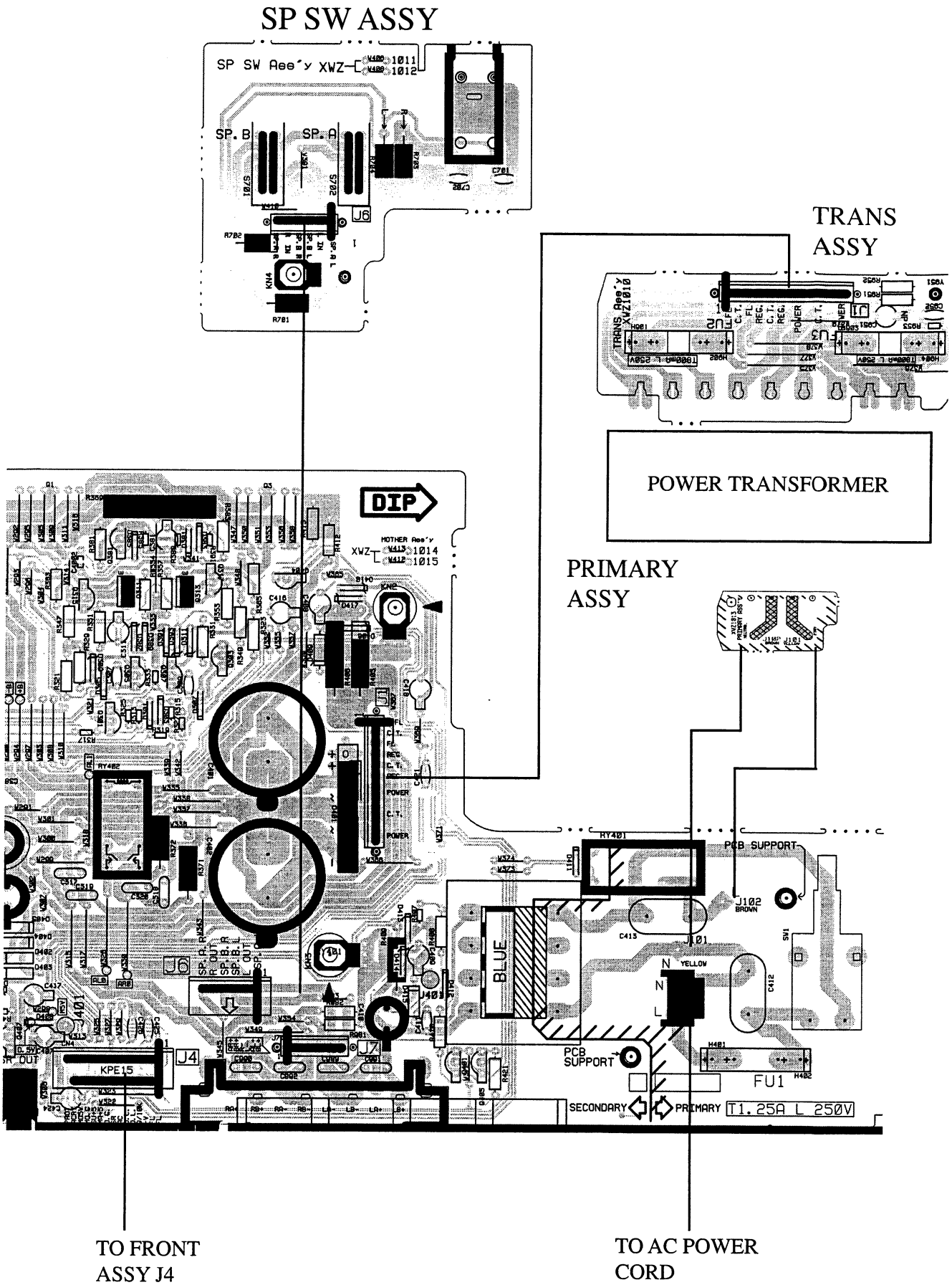
FRONT ASSY

TO VOLUME
ASSY CN3

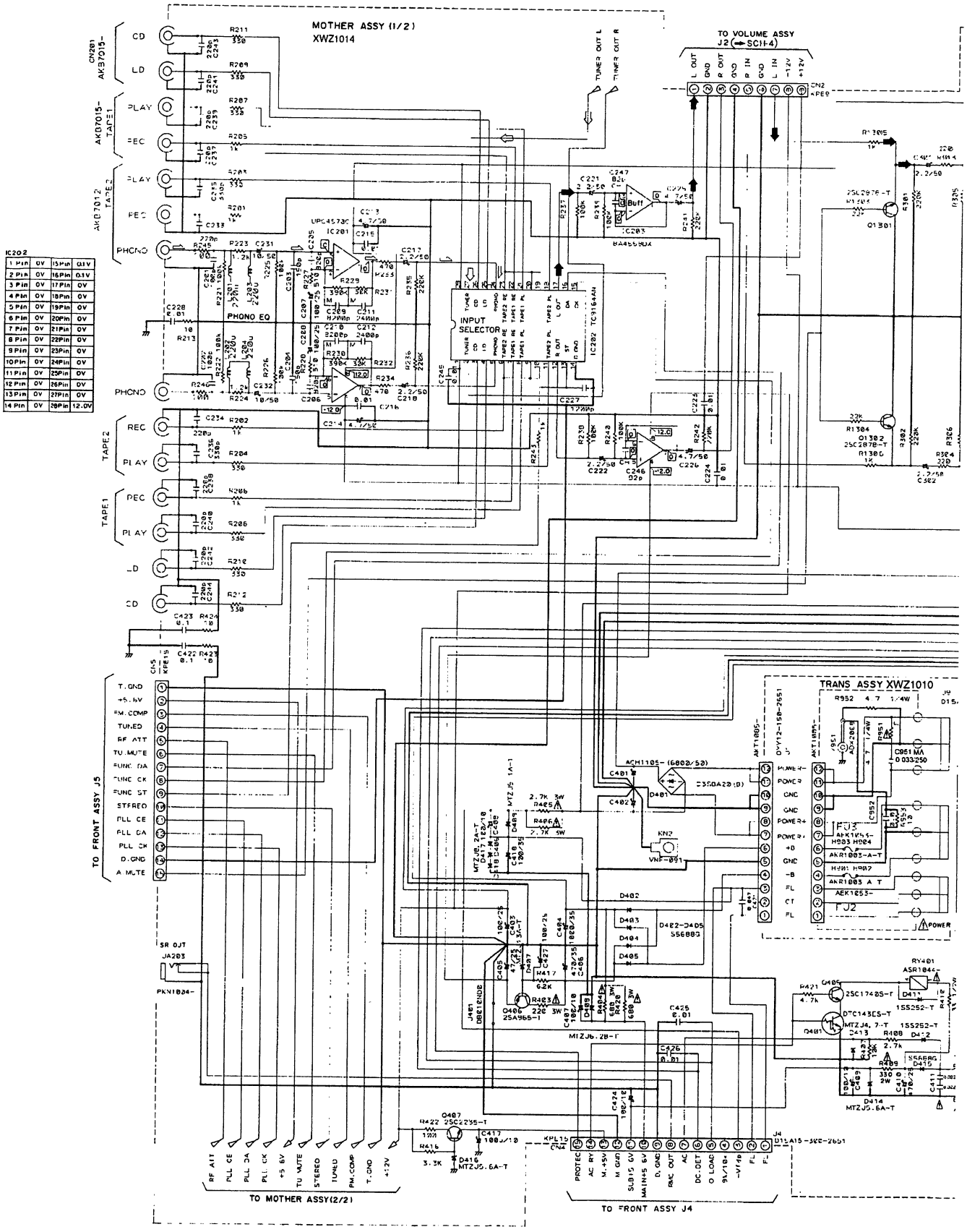


2.5 MOTHER ASSY, REG ASSY, TRANS ASSY AND SP SW ASSY

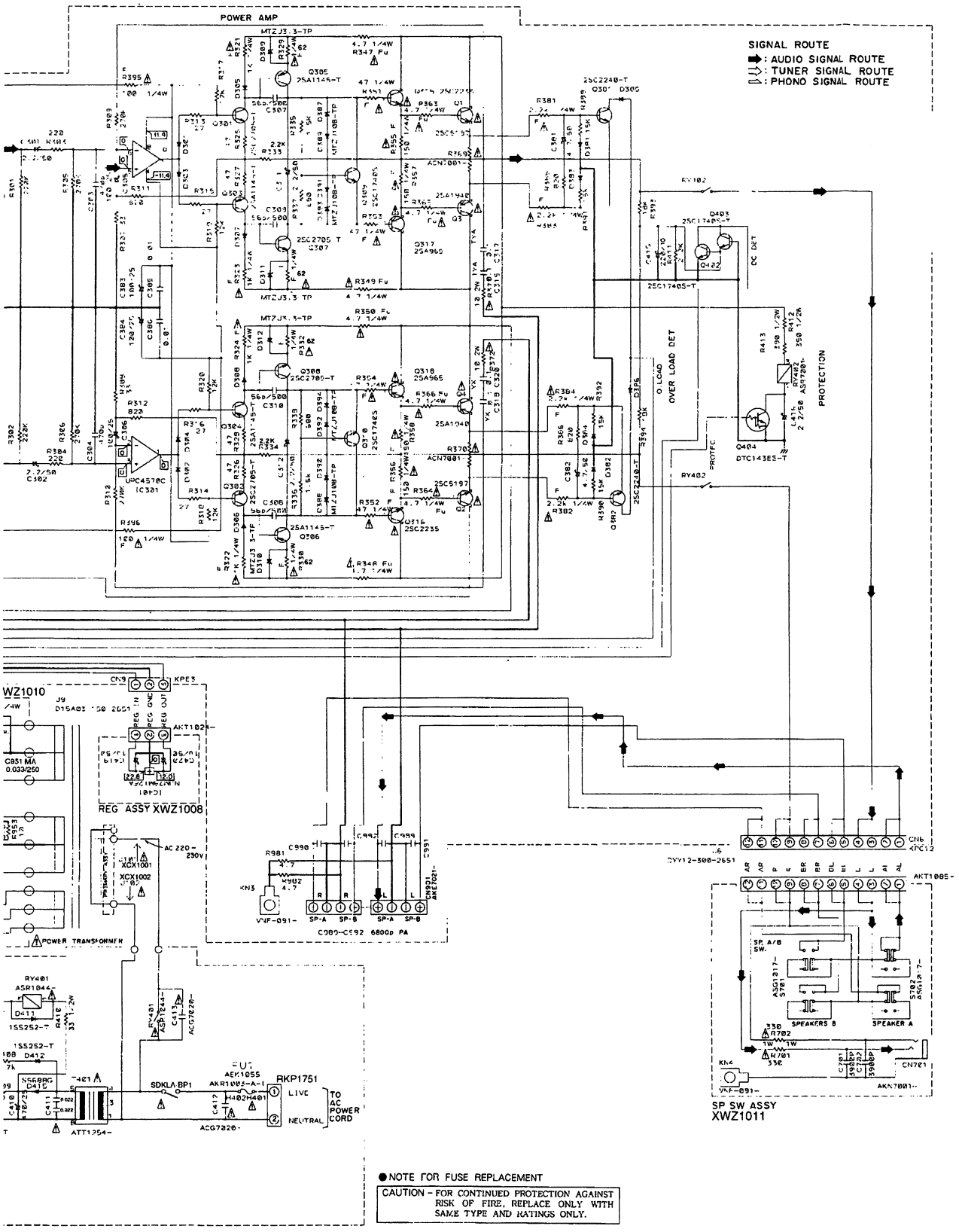



SP SW ASSY
SP. B
SP. A
TRANS ASSY
POWER TRANSFORMER
PRIMARY ASSY
DIP
PCB SUPPORT
BLUE
YELLOW
J102
BROWN
J101
FU1
T1.25A L 250V
SECONDARY
PRIMARY
KPE15
J4
J6
J7
TO FRONT ASSY J4
TO AC POWER CORD

MOTHER ASSY (1/2)



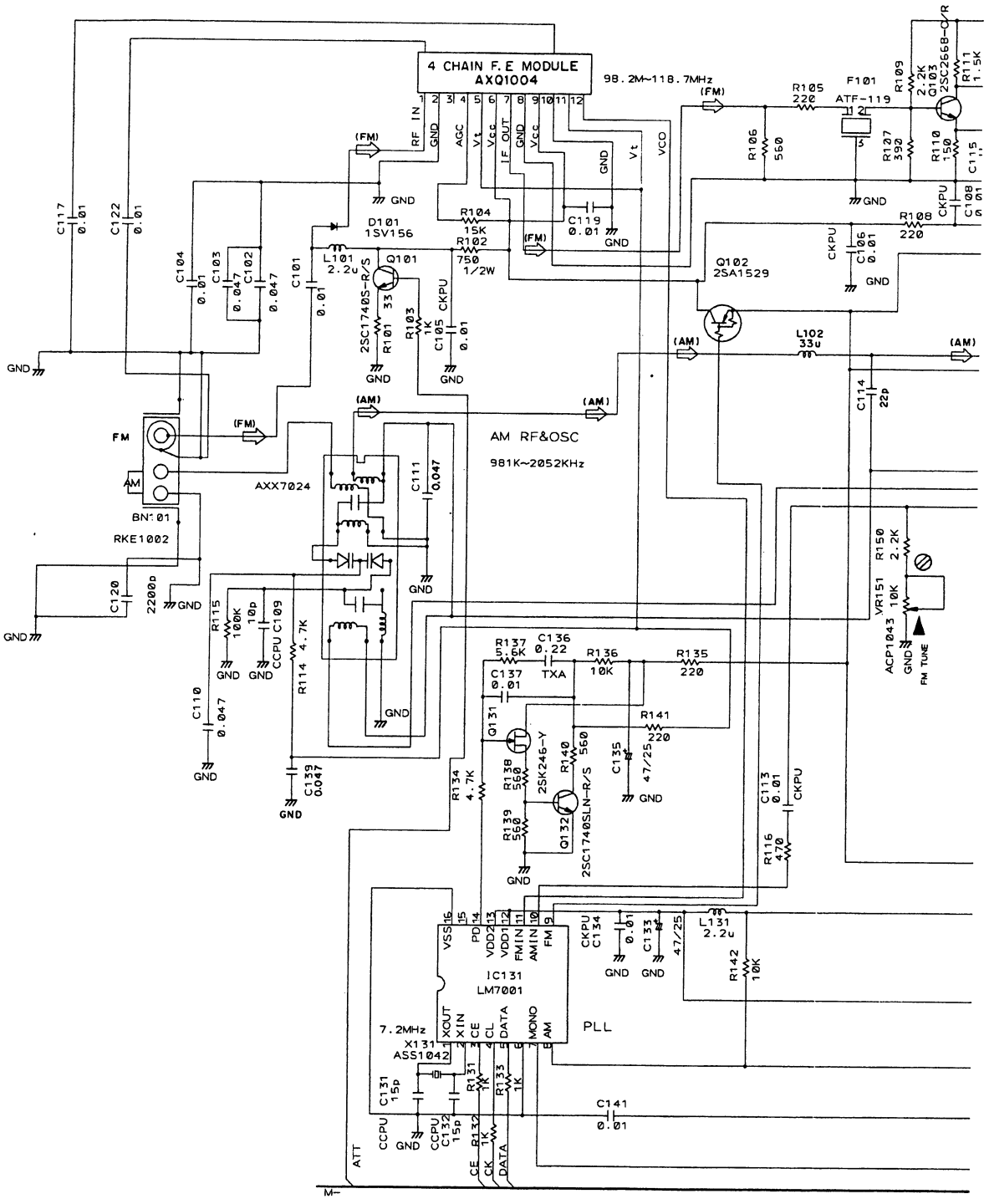
IC202			
1 Pin	0V	15Pin	0.1V
2 Pin	0V	16Pin	0.1V
3 Pin	0V	17Pin	0V
4 Pin	0V	18Pin	0V
5 Pin	0V	19Pin	0V
6 Pin	0V	20Pin	0V
7 Pin	0V	21Pin	0V
8 Pin	0V	22Pin	0V
9 Pin	0V	23Pin	0V
10Pin	0V	24Pin	0V
11 Pin	0V	25Pin	0V
12 Pin	0V	26Pin	0V
13Pin	0V	27Pin	0V
14 Pin	0V	28Pin	12.0V

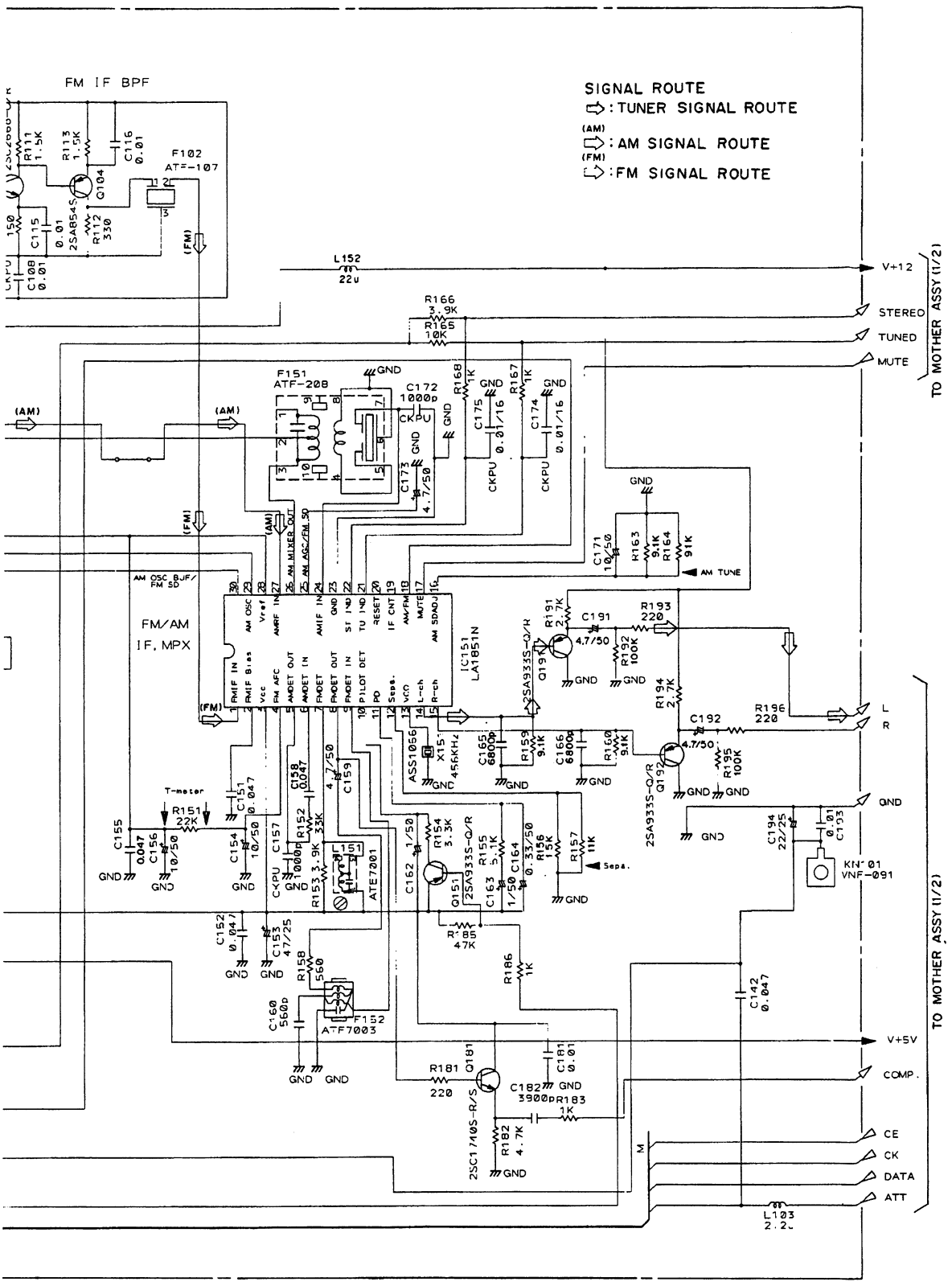


● NOTE FOR FUSE REPLACEMENT

CAUTION – FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

MOTHER ASSY (2/2)




FM IF BPF
SIGNAL ROUTE
: TUNER SIGNAL ROUTE
(AM) : AM SIGNAL ROUTE
(FM) : FM SIGNAL ROUTE
F102
AT=-107
Q104
2SA854S
R111 1.5K
R113 1.5K
C116 0.01
R112 330
C115 0.01
150
C108 0.01
L152
22u
V+12
STEREO
TUNED
MUTE
TO MOTHER ASSY (1/2)
R166 3.9K
R165 10K
F151
ATF-208
C172 1000p
C173 4.7/50
C175 0.01/16
C174 0.01/16
R168 1K
R167 1K
CKPU
GND
(AM)
(FM)
C171 10/50
R163 9.1K
R164 91K
AM TUNE
FM/AM
IF, MPX
IC151
LA1851N
AM OSC BUF/ FM SD
AM OSC
Vref
AMIF IN
AMIF IN
AM MIXER OUT
AM AGC/FM SD
GND
ST IND
TU IND
RESET
IF CNT
AM/FM
MUTE
AM SDAOUT
FMIF IN
FMIF Bias
Vcc
FM AFC
AMDET OUT
AMDET IN
FMDET
FMDET OUT
FMDET IN
PILOT DET
PD
Sepa.
Vcm
L-ch
R-ch
R191 2.7K
C191 4.7/50
R193 220
R192 100K
Q191
2SA933S-Q/R
R194 2.7K
C192 4.7/50
R196 220
R195 100K
Q192
L
R
C165 6800p
C166 6800p
R159 9.1K
R160 9.1K
X151 456KHz
ASS1056
T-meter
R151 22K
C155 0.047
C156 10/50
C154 10/50
C157 1000p
R152 33K
R153 3.9K
C158 0.047
C159 4.7/50
C151 0.047
L151
ATF7001
C162 1/50
R154 3.3K
Q151
2SA933S-Q/R
R155 5.1K
C163 1/50
C164 0.33/50
R156 1.5K
R157 11K
Sepa.
R185 47K
C152 0.047
C153 47/25
R158 560
C160 560p
F152
ATF7003
R186 1K
C142 0.047
C194 22/25
C193 0.01
KN-01
VNF-091
V+5V
COMP.
CE
CK
DATA
ATT
TO MOTHER ASSY (1/2)
R181 220
Q181
2SC1740S-R/S
C181 0.01
C182 3900p
R183 1K
R182 4.7K
L103 2.2u

3. PCB PARTS LIST

NOTES:

* Parts marked by "NSP" are generally unavailable because they are not in ou Master Spare Parts List.
* The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
* Parts marked by are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
* When ordering resistors, first convert resistance values into code form as shown in the folowing examples.

ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 27k ohm (tolerance is shown by J=5%, and K=10%).

560 Ohm	56×10^1	561	RD1/4PU561J
47k Ohm	47×10^3	473	RD1/4PU473J
0.5 Ohm	0R5		RD1/4PU0R5J
1 Ohm	1R0		RD1/4PU1R0J

ex.2 When there are 3 effective digits (such as high precision metal film resistors).

5.62 k Ohm	562×10^1	5621	RN1/4PC5621F

LIST OF WHOLE PCB ASSEMBLIES

Mark	PCB Assemblies	SX-209RDS
	AF ASSY	XWE1002
NSP	├──MOTHER ASSY	XWZ1014
NSP	│ └──F.E.MODULE	AXQ1004
NSP	├──FRONT ASSY	XWZ1006
NSP	├──VOLUME ASSY	XWZ1007
NSP	├──LED ASSY	XWZ1005
NSP	├──SP SW ASSY	XWZ1011
NSP	├──TRANS ASSY	XWZ1010
NSP	├──REG ASSY	XWZ1008
NSP	└──PRIMARY ASSY	XWZ1013

Assembly only for the printed circuit board, there are no components

MOTHER ASSY

Part	Description	Type	Ref:-									
SEMICONDUCTORS												
BA4558DX	OP AMP IC	IC	203									
LA1851N	AM/FM IC	IC	151									
LM7001J	PLL IC	IC	131									
TC9164	E-SW IC	IC	202									
UPC4570C	OP AMP IC	IC	201	301								
2SA1145-0	TRANSISTOR	Q	303	304	305	306						
2SA1529	TRANSISTOR	Q	102									
2SA854S(QR)	TRANSISTOR	Q	104									
2SA933S(QR)	TRANSISTOR	Q	151	191	192							
2SA965-O	TRANSISTOR	Q	317	318	406							
2SC1740SLN(RS)	TRANSISTOR	Q	132									
2SC1740S(RS)	TRANSISTOR	Q	101	181	309	310	402	403	405			
2SC2235-O	TRANSISTOR	Q	315	316	407							
2SC2240(GRBL)	TRANSISTOR	Q	381	382								
2SC2668(RO)	TRANSISTOR	Q	103									
2SC2705-0	TRANSISTOR	Q	301	302	307	308						
2SC2878(AB)	TRANSISTOR	Q	1301	1302								
2SK246-Y	TRANSISTOR	Q	131									
DTC143ES	TRANSISTOR	Q	401	404								
ISS254	DIODE	D	301	302	303	304	305	306	307	308	381	382
ISS254	DIODE	D	383	384	385	386	389	390	391	392	411	412
ISV156	DIODE	D	101									
MTZJ10B	DIODE	D	387	388	393	394						
MTZJ12C	DIODE	D	407									
MTZJ3.3	DIODE	D	309	310	311	312						
MTZJ4.7	DIODE	D	413									
MTZJ5.1A	DIODE	D	409									
MTZJ5.6A	DIODE	D	414	416								
MTZJ6.2B	DIODE	D	408									
MTZJ8.2A	DIODE	D	408	417	418							
S5688G	DIODE (TPA3)	D	402	403	404	405	415					
D3SBA20(B)	DIODE BRIDGE	D	401									
COILS AND FILTERS												
ASS1042	CRYSTAL RESONATOR	X	131									
ASS1066	CRYSTAL RESONATOR	X	151									
LAU220J	INDUCTOR	L	152									
LAU221J	INDUCTOR	L	201	202	203	204						
LAU2R2J	INDUCTOR	L	101	103	131							
LAU330J	INDUCTOR	L	102									
ATE7001	COIL	L	151									
ATF-107	CERAMIC FILTER	F	102									
ATF-119	CERAMIC FILTER	F	101									
ATF-208	CERAMIC FILTER	F	151									
ATF7003	ANTI BIRDIE FILTER	F	152									
SWITCHES AND RELAYS												
ASR1044	RELAY	RY	401									
ASR7001	RELAY	RY	402									
CAPACITORS												
CCCCH820J50	CERAMIC CAPACITOR	C	246	247								
CCCSL101J50	CERAMIC CAPACITOR	C	201	202								
CCCSL151J50	CERAMIC CAPACITOR	C	203	204								
CCCSL220J50	CERAMIC CAPACITOR	C	114									
CCCSL221J50	CERAMIC CAPACITOR	C	233	234	237	238	239	240	241	242	243	244
CCCSL560K52H	CERAMIC CAPACITOR	C	307	308	309	310						
CEAT1R0M50	ELECTROLYTIC CAPACITOR	C	162	163	419	420						
CEAT100M50	ELECTROLYTIC CAPACITOR	C	154	156	171	231	232					
CEAT101M10	ELECTROLYTIC CAPACITOR	C	407	408	409	417	424					
CEAT101M25	ELECTROLYTIC CAPACITOR	C	207	208	305	306	383	384	403	427		
CEAT101M35	ELECTROLYTIC CAPACITOR	C	418									
CEAT220M25	ELECTROLYTIC CAPACITOR	C	194	612								
CEAT221M10	ELECTROLYTIC CAPACITOR	C	415									
CEAT2R2M50	ELECTROLYTIC CAPACITOR	C	217	218	221	222	301	302	311	312	416	
CEAT4R7M50	ELECTROLYTIC CAPACITOR	C	159	173	191	192	213	214	225	226	381	382
CEATR33M50	ELECTROLYTIC CAPACITOR	C	164									
CEAT470M25	ELECTROLYTIC CAPACITOR	C	133	135	153	405						
CFTXA224J50	AUDIO FILM CAPACITOR	C	136									

SX-209

CGCYX103M16	CERAMIC CAPACITOR	C	101	104	115	116	119	137	141	181	193	425
CGCYX103M16	CERAMIC CAPACITOR	C	426									
CGCYX104M16	CERAMIC CAPACITOR	C	422	423								
CGCYX473M16	CERAMIC CAPACITOR	C	102	103	110	111	139	151	152	155	158	
CGCYX473M16	CERAMIC CAPACITOR	C										
CGCYX223K25	CERAMIC CAPACITOR	C	411 (2 IN SERIES)									
XCS1004	CERAMIC CAPACITOR	C	227									
CKCYB331K50	CERAMIC CAPACITOR	C	235	236								
CKCYB392K50	CERAMIC CAPACITOR	C	182									
CKCYB471K50	CERAMIC CAPACITOR	C	303	304								
CKCYB561K50	CERAMIC CAPACITOR	C	160									
CKCYB821K50	CERAMIC CAPACITOR	C	205	206								
CKCYF103Z50	CERAMIC CAPACITOR	C	215	216	223	224	228	245	385	386		
CKCYF473Z50	CERAMIC CAPACITOR	C	421									
CQMA242J50	MYLAR CAP	C	211	212								
CQMA822J50	MYLAR CAP	C	209	210								
CQPA682J2A	CERAMIC CAPACITOR	C	165	166								
CCPUCH100J50	CERAMIC CAPACITOR	C	109									
CCPUCH150J50	CERAMIC CAPACITOR	C	131	132								
CKPUYB102K50	ELECTROLYTIC CAPACITOR	C	157	172								
CKPUYF473Z16	ELECTROLYTIC CAPACITOR	C	142									
CKPUYY103M16	ELECTROLYTIC CAPACITOR	C	105	106	108	113	134	174	175			
ACH1105	ELECTROLYITIC CAP	C	401	402								
CEAS102M35	ELECTROLYTIC CAP	C	404									
CEAS471M25	ELECTROLYTIC CAP	C	410									
CEAS471M35	ELECTROLYTIC CAP	C	406									
ACG7020	CERAMIC CAPACITOR	C	412	413								
RESISTORS												
RFA1/4PS4R7J	CARBON FILM RESISTOR	R	347	348	349	350	363	364	365	366		
ACN7001	RESISTOR	R	369	370								
RS2LMF100J	RESISTOR	R	371	372								
RS2LMF331J	RESISTOR	R	409									
RS3LMF221J	RESISTOR	R	403									
RS3LMF272J	RESISTOR	R	405	406								
RS3LMF681J	RESISTOR	R	404	420								
RD1/2PM330J	CARBON FILM RESISTOR	R	410									
RD1/2PM391J	CARBON FILM RESISTOR	R	412	413								
RD1/2PM622J	CARBON FILM RESISTOR	R	417									
RD1/2PM751J	CARBON FILM RESISTOR	R	102									
RD1/4PMF101J	CARBON FILM RESISTOR	R	395	396								
RD1/4PMF102J	CARBON FILM RESISTOR	R	321	322	323	324						
RD1/4PMF151J	CARBON FILM RESISTOR	R	355	356	357	358						
RD1/4PMF222J	CARBON FILM RESISTOR	R	381	382	383	384						
RD1/4PMF470J	CARBON FILM RESISTOR	R	351	352	353	354						
RD1/4PMF620J	CARBON FILM RESISTOR	R	329	330	331	332						
RD1/4PU***J	All other resistors											
OTHERS												
SDKLA1-BP1	PRIMARY SWITCH	SW	1									
ATT1254	TRANSFORMER	T	401									
VCP1156	PRE-SET RESISTOR	VR	151									
RD1/4PU102J	CARBON FILM RESISTOR		205	206	243							
RD1/4PU104J	CARBON FILM RESISTOR		240									
AKB7012	JACK 6P		201									
AXQ1004	F.E. MODULE ASSY											
AXX7024	AM RF TINING BLOCK		101									
PNB1285	FL HOLDER											
RKE1002	ANTENNA TERMINAL		102									
RKP1751	AC INLET SOCKET											
AKR7001	FUSE CLIP	H	401	402								
DB013NBO	WIRE WITH TERMINAL	J	401									
DYY12-200-2651	FLAT CABLE	J	1									
D15A03-150-2651	FLAT CABLE	J	9									
XDX1001	WIRE WITH TERMINAL	J	102									
XDX1002	WIRE WITH TERMINAL	J	101									
51052-1200	CABLE HOLDER	J	1									
PKN1004	JACK	JA	203									
AKB7015	JACK 4P	CN	201	202								
AKE7021	SPEAKER TERMINAL	CN	901									
AKN7001	JACK	CN	701									
KPC6	CONNECTOR	CN	6									
KPE15	CONNECTOR	CN	4	5								
KPE3	CONNECTOR	CN	9									
KPE9	CONNECTOR	CN	2									

FRONT ASSY

Part	Description	Type	Ref:-								
SEMICONDUCTORS											
BA4558DX	OP AMP IC	IC	501								
PDG256A	MICRON IC	IC	826								
SAA6579	RDS IC	IC	801								
2SC1740S(RS)	TRANSISTOR	Q	501	502	803						
DTA124ES	TRANSISTOR	Q	827	833							
DTA143ES	TRANSISTOR	Q	828	829							
DTC124ES	TRANSISTOR	Q	831								
DTC143ES	TRANSISTOR	Q	802	826	830						
AEL1065	LED	D	826								
BR3371XJ30A	LED	D	876								
ISS254	DIODE	D	827	828	829	830	831	836	837	838	839
COILS AND FILTERS											
ASS1055	CRYSTAL RESONATOR	X	826								
ASS7004	CRYSTAL RESONATOR	X	801								
LAU1R0J	INDUCTOR	L	827								
LAU220J	INDUCTOR	L	828	830	831	834	835				
LAU2R2J	INDUCTOR	L	826	829	832	833					
SWITCHES AND RELAYS											
RSG1030	TACTILE SWITCH	S	826	827	828	829	830	831	832	833	834	835
RSG1030	TACTILE SWITCH	S	836	837	838	839	840	841	842	876		
CAPACITORS											
ACH1246	ELECTROLYTIC CAPACITOR	C	828								
CCCCH470J50	CERAMIC CAPACITOR	C	803								
CCCCH820J50	CERAMIC CAPACITOR	C	804								
CEAT1R0M50	ELECTROLYTIC CAPACITOR	C	807	834							
CEAT100M50	ELECTROLYTIC CAPACITOR	C	501	502	505	506					
CEAT101M10	ELECTROLYTIC CAPACITOR	C	802	809							
CEAT221M10	ELECTROLYTIC CAPACITOR	C		827							
CEATR47M50	ELECTROLYTIC CAPACITOR	C	509	510							
CFTXA153J50	AUDIO FILM CAPACITOR	C	507	508							
CFTYA104J50	AUDIO FILM CAPACITOR	C	511	512							
CGCYX104M16	ELECTROLYTIC CAPACITOR	C	849	850							
CGCYX473M16	ELECTROLYTIC CAPACITOR	C	836	837	838						
XCS1004	ELECTROLYTIC CAPACITOR	C	840	841	842	843					
CKCYB331K50	ELECTROLYTIC CAPACITOR	C	835								
CKCYB561K50	ELECTROLYTIC CAPACITOR	C	805								
CCCSL151J50	CERAMIC CAPACITOR	C	503	504							
CKCYF473Z50	ELECTROLYTIC CAPACITOR	C	829	847							
CQMA242J50	ELECTROLYTIC CAPACITOR	C	833								
CKPUYF103Z25	ELECTROLYTIC CAPACITOR	C	839	846							
CKPUYY103M16	ELECTROLYTIC CAPACITOR	C	801	808	826	830	832	833			
CGCYX103M16	CERAMIC CAPACITOR	C	851	852	853	854					
RESISTORS											
XCS1002	POTENTIOMETER	VR	501	502							
XCS1003	POTENTIOMETER	VR	503								
RD1/4PU***J	All other resistors										
OTHERS											
D15A03-150-2651	FLAT CABLE	J	8								
51063-0305	CABLE HOLDER	J	8								
51063-1405	CABLE HOLDER	J	3								
51063-1505	CABLE HOLDER	J	4	5							
D15A14-150-2651	FLAT CABLE	J	3								
D15A15-350-2651	FLAT CABLE	J	4	5							
TSOP2840YA	REMOTE SENSOR	M	801								
XAV1001	FL TUBE										

SP SW ASSY

Part	Description	Type	Ref:-	
SWITCHES AND RELAYS				
ASG1017	PUSH SWITCH	S	701	702
CAPACITORS				
CKCYB392K50-T	ELECTROLYTIC CAPACITOR	C	701	702
RESISTORS				
RS1LMF331J	RESISTOR	R	701	702
OTHERS				
DYY06-300-2651	FLAT CABLE	J	6	
AKN7001	HEADPHONE SOCKET	CN	701	

TRANS ASSY

Part	Description	Type	Ref:-				
CAPACITORS							
CQMA333K2E	ELECTROLYTIC CAPACITOR	C	951				
CQPA682J2A	ELECTROLYTIC CAPACITOR	C	989	990	991	992	
CKCYF103Z50	ELECTROLYTIC CAPACITOR	C	952				
RESISTORS							
RD1/4PMF4R7J	CARBON FILM RESISTOR	R	951				
RD1/4PU***J	All other resistors						
OTHERS							
AKR7001-A	FUSE CLIP	H	901	902	903	904	
51052-1200	CABLE HOLDER	J	1				
ADX2068	1 PIN LEAD WIRE	Y	951				

REG ASSY

Part	Description	Type	Ref:-				
SEMICONDUCTORS							
NJM78M12FA	REGULATOR	IC	401				
CAPACITORS							
CEAT1R0M50	ELECTROLYTIC CAPACITOR	C	419	420			
OTHERS							
51063-0305	CABLE HOLDER	J	9				

VOLUME ASSY

Part	Description	Type	Ref:-					
SEMICONDUCTORS								
BA4558DX	OP AMP IC	IC	601					
2SA1993(EF)	TRANSISTOR	Q	612	613				
2SC5395(EF)	TRANSISTOR	Q	614	615				
2SK246(Y)	TRANSISTOR	Q	601	602	603	604	605	606
DTA124ES	TRANSISTOR	Q	608	610				
DTC124ES	TRANSISTOR	Q	609	611	607			
ISS254	DIODE	D	601	602	603	604	605	606
COILS AND INDUCTORS								
LAU220J	INDUCTOR	L	601	602				
CAPACITORS								
CCCSL101J50	CERAMIC CAPACITOR	C	613	614				
CCCSL560K52H	CERAMIC CAPACITOR	C	615	616				
CEAT2R2M50	ELECTROLYTIC CAPACITOR	C	605					
CKCYB331K50	ELECTROLYTIC CAPACITOR	C	601	602				
CKCYF473Z50	ELECTROLYTIC CAPACITOR	C	603	604				
CEANP4R7M35	ELECTROLYTIC CAP	C	611					
RESISTORS								
ACX7021	VARIABLE RESISTOR	VR	601					
RD1/4PU***J	All other resistors							
OTHERS								
KPC14	CONNECTOR	CN	3					
D15A09-250-2651	FLAT CABLE	J	2					
51052-0600	CABLE HOLDER	J	6					
51063-0905	CABLE HOLDER	J	2					

4. ADJUSTMENT

ADJUSTMENT OF MW TUNER SECTION

- Set the FM/AM selector to AM (MW) BAND.
- Connect the wiring as shown in Fig. 1–1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV/m)			
1	TUNED IND. Lighting Level Check	999	Less than 65	999 kHz	——	Less than 65 dBμV/m. In case out of standard, cut the R164.

ADJUSTMENT OF FM TUNER SECTION

- Set the FM/AM selector to FM BAND.
- Connect the wiring as shown in Fig. 1–1.

Step No.	Adjustment Title	FM SG (1kHz, ±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Center Adjustment	98	60	98.0 MHz	L151	Adjust so that the DC voltage of R151's both ends becomes 0V±50mV. R151 V = 0±50mV DC VOLTMETER
2	Front-end Sensitivity Check	98	Less than 14	98.0 MHz	——	Less than 14 dBμV.
3	Stereo Separation Check	89	60	89.0 MHz	——	Less than 23 dB. In case out of standard, cut the R157.
4	TUNED IND. Lighting Level	98	18 (±3 dB)	98.0 MHz	VR151	18 dBμV±3 dB. Adjust so that the indicator of TUNED IND. starts to light up.

Note:

- *Make indicator adjustments in order of AM → FM.*

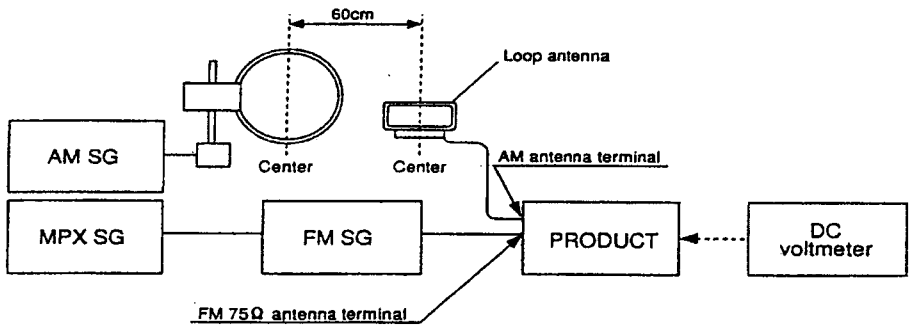


Fig. 1–1. AM and FM Adjustment Wiring Diagram

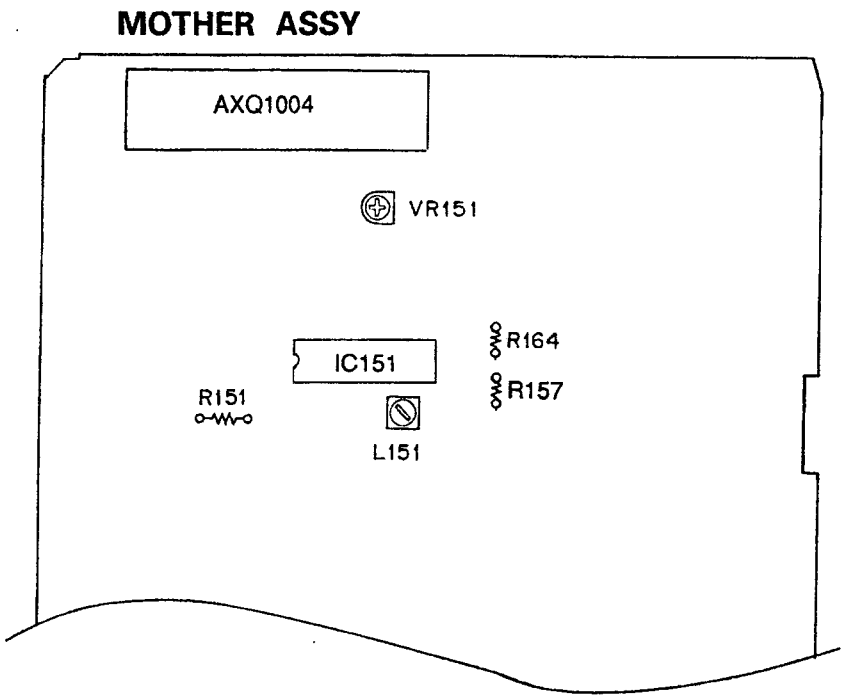


Fig. 1-2. Adjustment Points

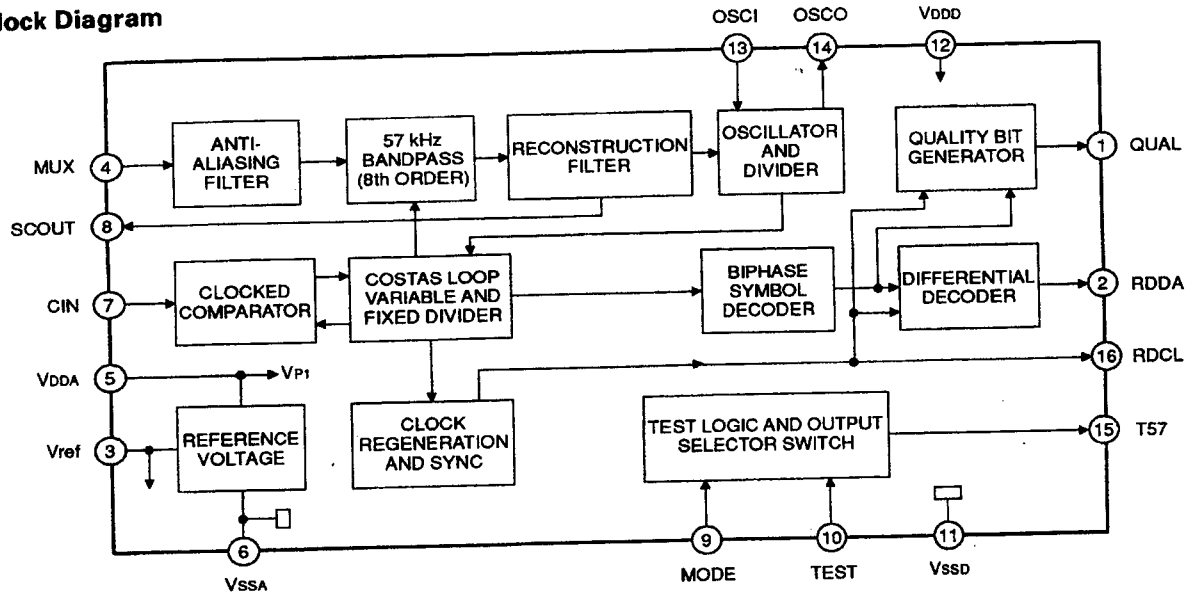
5. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ SAA6579 (FRONT ASSY: IC801)
Radio data system demodulator (RDS), CMOS IC

The SAA6579 is a demodulator circuit for RDS applications. It contains a 57 kHz bandpass filter and a digital demodulator to regenerate the RDS data stream out of the multiplex signal (MPX).

● Block Diagram



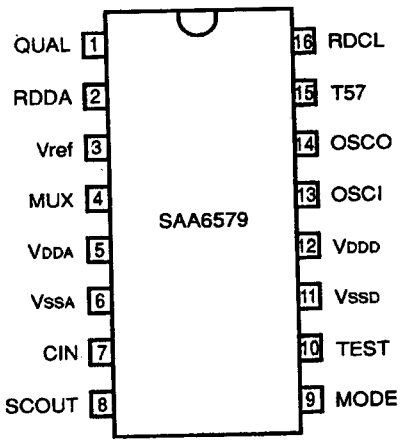
Via the pin MODE two different crystal frequencies can be used

MODE	x-tal clock
LOW	4.332 MHz
HIGH	8.664 MHz

● Pin Function

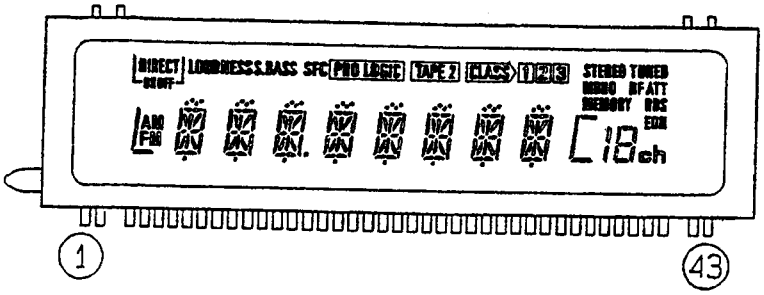
Pin No.	Pin Name.	I/O	Pin Function
1	QUAL	O	Quality indication output
2	RDDA	O	RDS data output
3	Vref	–	Reference voltage output (0.5 VDDA)
4	MUX	I	Multiplex signal input
5	VDDA	–	+5 V supply voltage for analog part
6	VSSA	–	Ground for analog part (0 V)
7	CIN	I	Subcarrier input to comparator
8	SCOUT	O	Subcarrier output of reconstruction filter
9	MODE	–	Oscillator mode/test control input
10	TEST	I	Test enable input
11	VSSD	–	Ground for digital part (0 V)
12	VDDD	–	+5 V supply voltage for digital part
13	OSCI	I	Oscillator input
14	OSCO	O	Oscillator output
15	T57	O	57 kHz clock signal output
16	RDCL	O	RDS clock output

● Pin Arrangement (Top View)



6. FL INFORMATION

■ AAV7026 (FRONT ASSY: V826)



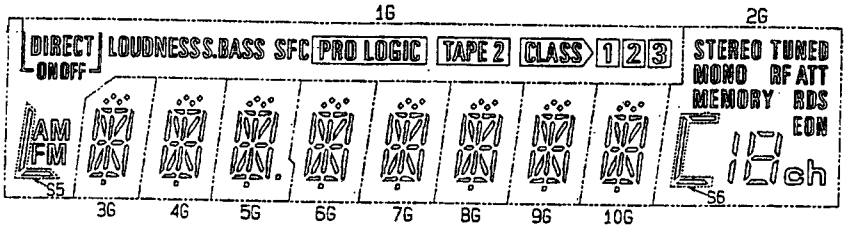
● Pin Assignment

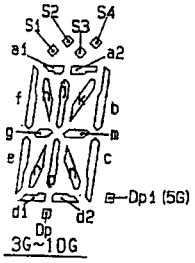
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Assignment	F1	F1	NP	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	NL	NL	NL	NL	NL	NL	S21	S16	S17

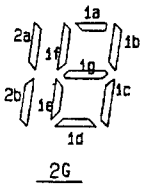
Pin No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Assignment	S15	S13	S12	S14	S11	S10	S9	S8	S7	S6	S5	S3	S4	S2	S1	S18	S19	S20	NP	F2	NL

F1, F2:Filament G1~G10:Grid S1~S21:Anode NL:No Lead NP:No Pin

● Grid Assignment



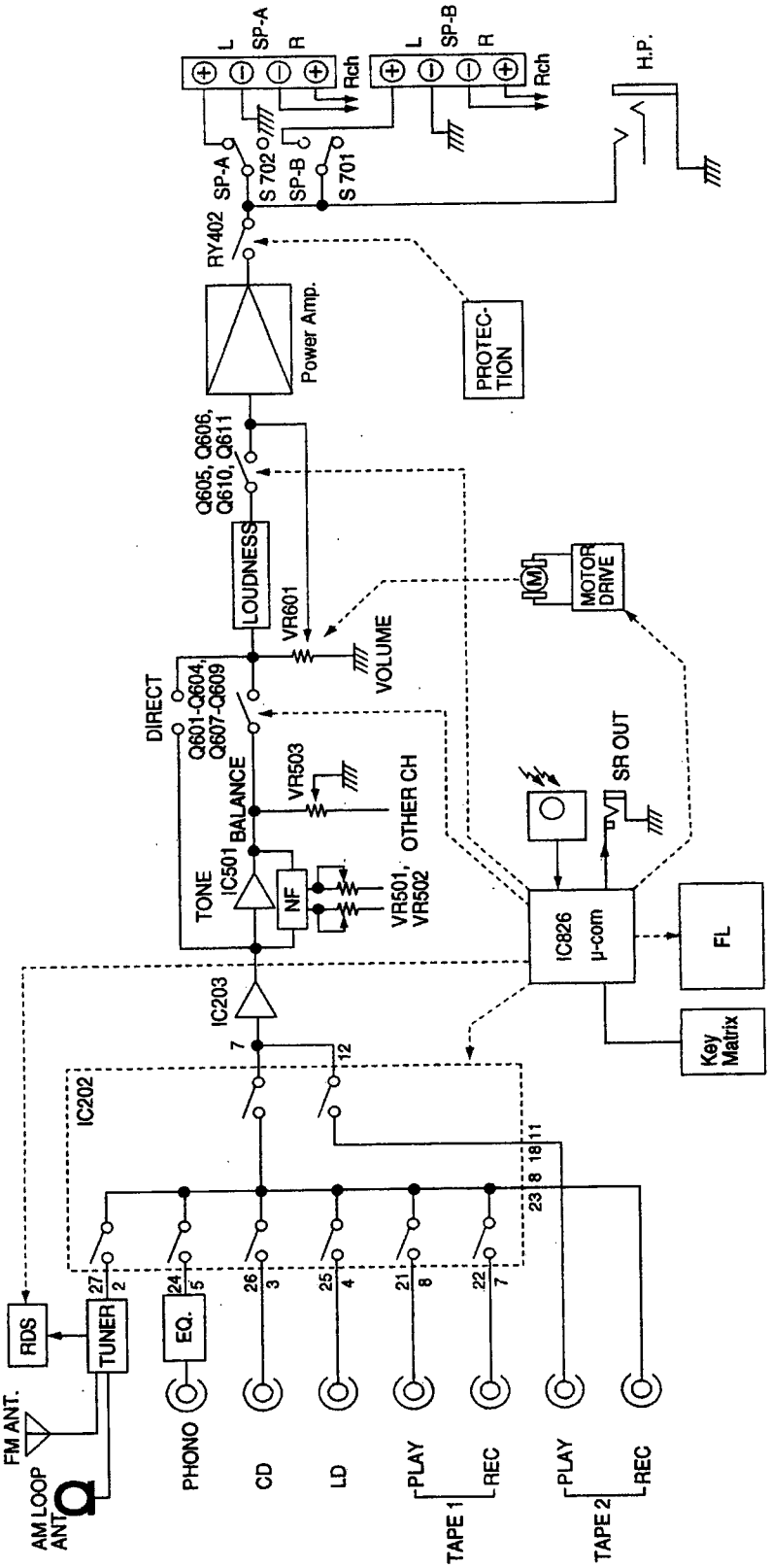




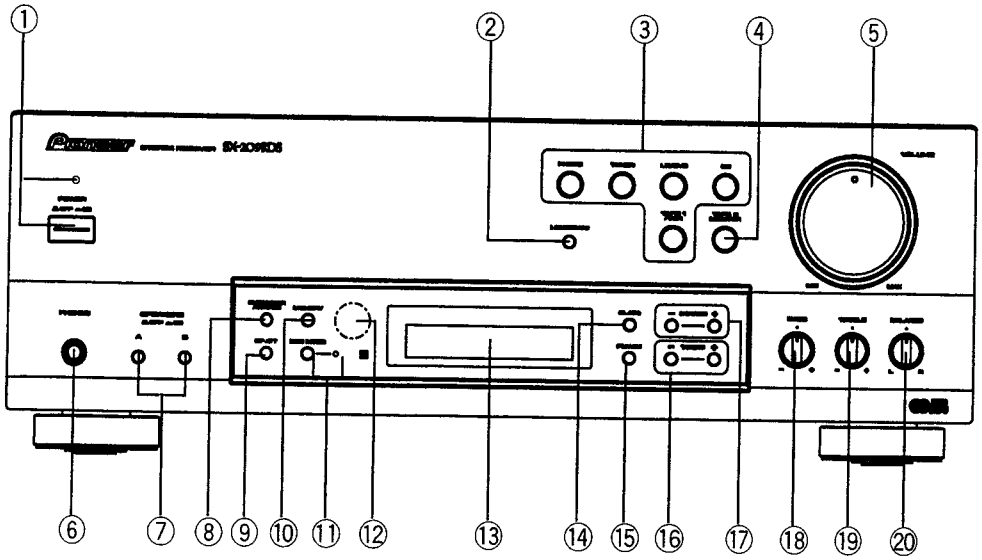
● Anode Grid Assignment

	1G	2G	3G, 4G, 6G~10G	5G
S1	S5	S6	a1	a1
S2	FM	2a, 2b	a2	a2
S3	AM	1a	h	h
S4	DIRECT	1b	j	j
S5	ON	1c	k	k
S6	OFF	1d	b	b
S7	PRO LOGIC	1e	f	f
S8	SFC	1f	m	m
S9	LOUDNESS	1g	g	g
S10	S. BASS	ch	c	c
S11	TAPE 2	STEREO	e	e
S12	CLASS	TUNED	r	r
S13	1	MONO	p	p
S14	2	RF ATT	n	n
S15	3	MEMORY	d1	d1
S16		RDS	d2	d2
S17		EON	Dp	Dp
S18			S1, S3	S1, S3
S19			S4	S4
S20			S2	S2
S21				Dp1

7. BLOCK DIAGRAM



8. FRONT PANEL FACILITIES



① POWER switch/STANDBY indicator

This is the switch for electric power.

ON: When set to the ON position, power is supplied and the unit becomes operational.
OFF: When set to the OFF position, no power is supplied to the unit .

(REMOTE CONTROL ONLY)
STANDBY: When set to the STANDBY position, the STANDBY indicator lights and the main power flow is cut so the unit is no longer fully operational.
A minute flow of power feeds the unit to maintain operation readiness.

NOTE:
When the power is initially turned ON, muting will be applied to prevent sound from being output for approx. 5 seconds.

② LOUDNESS button

Use when listening at low volume levels.
ON: Boosts low and high frequencies to produce a fuller sense of sound, particularly at low volume levels.
OFF: Normal position.
NOTE:
Cannot be used when the DIRECT function is ON.
The DIRECT function can be turned ON/OFF using the remote control unit.

③ Function buttons

Use to select playback source.
[PHONO] — Press when listening to record playback on a turn table.
[TUNER] — Press when listening to AM or FM broadcasts with a tuner.
[LD/DVD] — Press when listening to LaserDiscs played back from a LD player or Digital Video Discs played back from a DVD player.
[CD] — Press when listening to compact disc playback with a CD player.
[TAPE 1 /VCR] — Press when listening to tape playback with cassette deck 1 or a video cassette recorder.

④ TAPE 2 MONITOR button

Press when listening to tape playback with cassette deck 2.⑤ VOLUME control
Use to adjust the volume level.

⑥ PHONES jack

Connect the plug on your headphones to this jack. To listen to a program through the headphones, set both SPEAKERS A and B switches to the OFF position.

⑦ SPEAKERS (▮ OFF, ▬ ON) buttons

These are used to select the speaker through which you wish to listen.
A: When the speakers connected to the A terminals are in use.
B: When the speakers connected to the B terminals are in use.
÷ Turn both A and B speakers to the OFF position when only headphones are in use.

⑧ CHARACTER/SEARCH button

When receiving an AM broadcast, or when in the FM RT, FM PS modes:
Press the button, "INPUT" is displayed, and the mode switches to manual station name input.
When in the FM PTY mode:
Press the button, "SEARCH" is displayed, and the mode switches to program type search.
÷ This button does not function when the frequency is displayed (FM broadcast only).

⑨ RF ATT button

Set this button to ON when receiving strong FM signals (near-by stations) to reduce sound distortion. (RF ATT indicator lights.)
Normally, this button should be set to OFF.
This button has no effect on reception of AM broadcasts.

⑩ MEMORY button

Pressing this button will result in the memorization of the current broadcast band, reception frequency, RF ATT (FM reception only) and FM AUTO/MONO mode.
This button is also used to select characters during station name entry and to clear memory during ERASE PI operation.

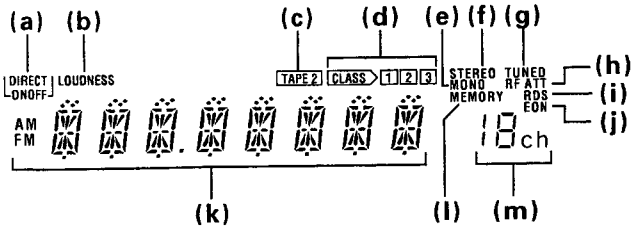
FRONT PANEL FACILITIES (cont)

⑪ EON (Enhanced Other Network information) MODE button/indicator

See page 15.

⑫ Remote sensor

⑬ OPERATION DISPLAY panel



(a) DIRECT ON/OFF indicator
(b) LOUDNESS indicator
(c) TAPE 2 monitor indicator.
(d) CLASS indicator
(e) MONO indicator
(f) Lights up when a stereo FM broadcast is being received.
(g) Lights up when a station is tuned.
(h) RF ATT indicator
(i) Lights when an RDS broadcast is received.
(j) Lights when a station broadcasting EON information is received.
(k) Frequency, function, character display
(l) MEMORY indicator
(m) Channel display

⑭ CLASS button

Use to switch between preset memory classes 1 to 3. In each class, one station can be memorized in each of the 1 to 10 STATION CALL buttons, enabling a total of 30 stations to be memorized.

⑮ FM/AM selector button

This button is used to select either AM or FM reception.

⑯ TUNING buttons (–, +)

Use for tuning frequencies. Press the buttons to change the frequency display (3-speed Accel Tuning) (See page 9).
In the Manual Name input mode and PTY search mode, use to select characters and program types.

⑰ STATION buttons (–, +)

+: Stations change in order in the upward direction.
–: Stations change in order in the downward direction.

⑱ BASS tone control

Use to adjust low-frequency tones. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized.

NOTE:

This control can not be used when the DIRECT function is ON. The DIRECT function can be turned ON/OFF using the remote control unit.

⑲ TREBLE tone control

Use to adjust high-frequency tones. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized.

NOTE:

This control can not be used when the DIRECT function is ON. The DIRECT function can be turned ON/OFF using the remote control unit.

⑳ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position and if the left side is louder, turn toward the R position.

NOTE:

This control can not be used when the DIRECT function is ON. The DIRECT function can be turned ON/OFF using the remote control unit.

9. SPECIFICATIONS

Amplifier Section

Continuous Power Output (DIN)
1 kHz, T.H.D. 1 %, 4 Ω ..... 50 W + 50 W
Continuous Power Output (both channels driven)* **
20 Hz – 20 kHz, T.H.D. 0.09 %, 8 Ω ..... 40 W + 40 W
Dynamic Power Output (with EIA test signal)
4/8 Ω ..... 80/50 W
Input (Sensitivity/Impedance)
PHONO ..... 2.5 mV/47 kΩ
CD, LD/DVD, TAPE 1/VCR, TAPE 2 ..... 200 mV/47 kΩ
Phono Overload Level (T.H.D. 0.1 %, 1 kHz)
PHONO ..... 100 mV
Output (Level/Impedance)
TAPE 1/VCR REC, TAPE 2 REC MONITOR ..... 200 mV/1 kΩ
Frequency Response**
PHONO (RIAA Equalization) ..... 20 Hz to 20,000 Hz ± 0.5 dB
CD, LD/DVD, TAPE 1/VCR, TAPE 2 ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio (DIN, continuous power/50mW)**
PHONO ..... 67 dB/61 dB
CD, LD/DVD, TAPE 1/VCR, TAPE 2 ..... 82 dB/62 dB
Tone Control
BASS ..... ± 8 dB (100 Hz)
TREBLE ..... ± 8 dB (10 kHz)
LOUDNESS ..... +6 dB (100 Hz at –40 dB)
+4 dB (10 kHz at –40 dB)

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 14.2 dBf, IHF (1.4 µV/75 Ω)
Sensitivity (DIN)
MONO ..... 1.0 µV/75 Ω
STEREO ..... 40 µV/75 Ω
Signal-to-Noise Ratio
MONO ..... 77 dB (at 80 dBf)
STEREO ..... 72 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN)
MONO ..... 62 dB
STEREO ..... 58 dB
Distortion
STEREO ..... 0.3 % (1 kHz)
Alternate Channel Selectivity ..... 64 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1 dB)
Antenna Input ..... 75 Ω unbalanced

AM Tuner Section
Frequency Range ..... 531 kHz to 1,602 kHz
Sensitivity
IHF, Loop Antenna ..... 350 µV/m
Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... AM Loop Antenna

Miscellaneous

Power Requirements ..... AC 230 Volts, 50/60 Hz
Power Consumption ..... 370 W
Dimensions ..... 420 (W) X 140 (H) X 313 (D) mm
Weight (without package) ..... 5.4 kg

Accessories Parts

FM Antenna 1
AM Loop Antenna 1
Remote Control Unit 1
Dry Cell Batteries (AA/R6P) 2
Operating Instructions 1

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

* *Measured by audio spectrum analyzer.*

** *Direct ON*

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.